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DEPARTMENT OF THE ARMY FIELD MANUAL

**QUARTERMASTER
ORGANIZATION
AND OPERATION IN
DIVISIONS**

DEPARTMENT OF THE ARMY • OCTOBER 1951

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DEPARTMENT OF THE ARMY

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PART ONE

QUARTERMASTER ORGANIZATION, LOGISTICS, AND OPERATION COMMON TO ALL DIVISIONS

CHAPTER 1

INTRODUCTION

1. PURPOSE

This manual outlines the organization of the quartermaster service in divisions and explains how quartermaster units provide supplies and service support for the divisions to which they are organic. It is intended as a guide to the employment of quartermaster forces in the theater of operations.

2. SCOPE

a. This manual covers the organization and the supply and service operations of the quartermaster company, infantry division; the quartermaster company, airborne division; and the quartermaster battalion, armored division.

b. The organization and technical operations of the Airborne Quartermaster Parachute Maintenance Company (T/O & E 10-337) are not covered in this manual. Since the parachute maintenance company,

however, is a quartermaster unit organic to the airborne division, its relation to the quartermaster company of that division is included.

c. Part one of the manual describes the common elements of quartermaster organization in relation to the supply and service operations. Procedures a unit may follow in support of the special tactical movements of its division, where they differ substantially from the general supply and service operations are also included in part one. Part two is concerned with differences of quartermaster service in the three types of divisions, and covers the specific organization of each quartermaster unit.

3. FORMS

The forms used in a combat zone for quartermaster supply and service operations in divisions will be prescribed by higher authority. Standard forms indexed in SR 310-20-6 will be used, as directed, wherever applicable. Specific forms in normal use at the divisional level are referenced in the text. DA AGO R forms in this manual will be reproduced *in their entirety by typewriter*.

4. GENERAL

a. The infantry, the airborne, and the armored division each has its special organization and techniques of operation. Quartermaster troops likewise are organized, trained, and employed in units whose operations vary according to the operation of the division they support. Just as all field forces share certain fundamental doctrines of combat operation,

so the basic principles of quartermaster supply and service are the same for all divisions.

b. A statement of quartermaster organization and operation at divisional level reflects the basic principles in common methods and procedures. No statement of a general method or procedure can include the many possible applications. The *normal* situations, to which this manual refers in describing systems and procedures remain approximate in the field. The practical application of any procedure to a specific situation will depend upon an ability to recognize what the situation, with its problems, has in common with others like it.

5. MISSION

The quartermaster service in divisions has in common an identity of mission and certain nearly identical capabilities and features in organization. The general mission of every divisional quartermaster unit is to support its division by providing all classes of quartermaster supply and limited bath, laundry, and graves registration.

CHAPTER 2

THE DIVISION QUARTERMASTER

Section I. OPERATION AND RESPONSIBILITIES IN RELATION TO OTHER ECHELONS

6. DUAL CAPACITY IN THE DIVISION

a. The division quartermaster operates in a dual capacity (fig. 1). He is a member of the division commander's special staff. He is also the commander of the division quartermaster service. These two functions, although coordinate and vested in one man, remain separate and entail separate duties and responsibilities.

b. The nature of his duties and the organization of the division quartermaster's office will depend upon his operation as an infantry, airborue, or armored quartermaster. In each type of division, however, quartermaster service is coordinated through the division quartermaster's dual capacity and joint responsibilities of staff and command.

7. QUARTERMASTER SPECIAL STAFF OFFICER

a. Staff Capacity. The division quartermaster does not command by virtue of his position as quartermaster for his division. As a special staff officer he acts solely in an advisory capacity to the division commander and his staff and in a supervisory capac-

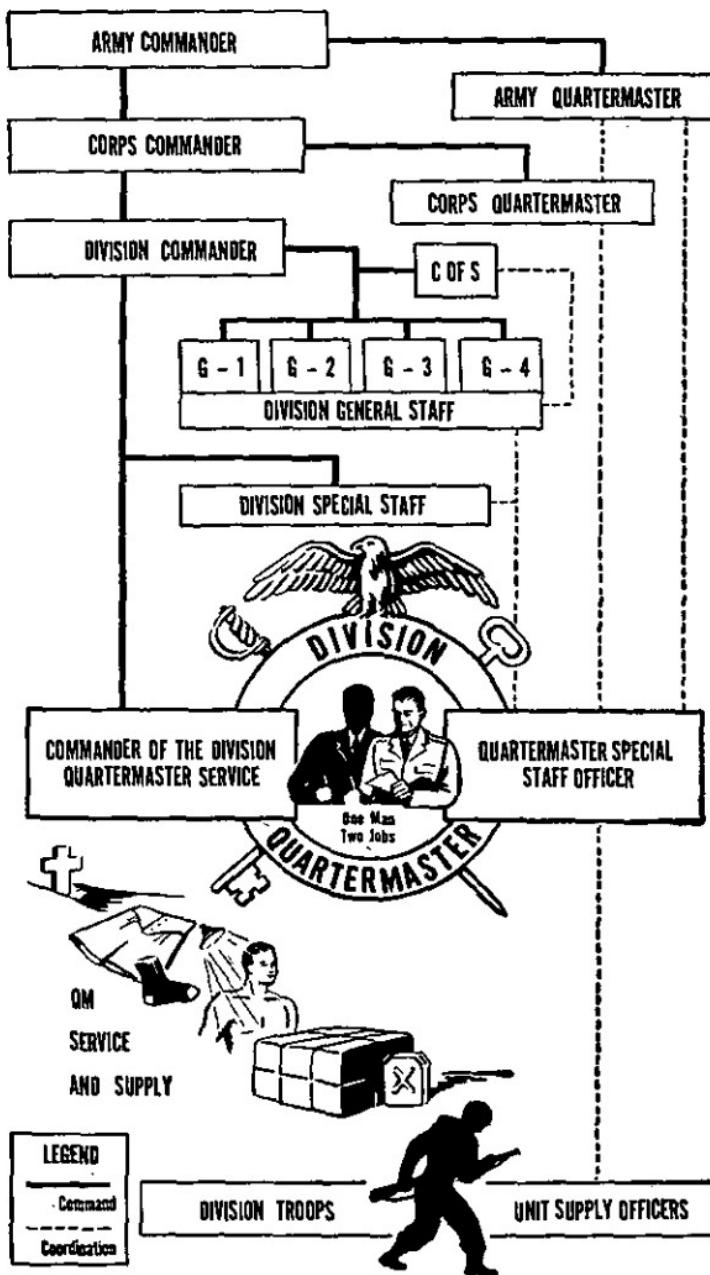


Figure 1. Dual capacity of the division quartermaster, showing relation to other echelons.

ity for the quartermaster supply and service requirements of all divisional units. He is assisted in his function as a special staff officer by the quartermaster staff members of the division quartermaster's office.

b. Staff Responsibilities.

- (1) In his advisory capacity, the quartermaster is responsible for providing technical advice and information for command policies and decisions, of which the quartermaster plan of operations is a part. He must be able to provide information on quartermaster activities, as required, since (in his command capacity) he also directs all quartermaster service for the division. From his position as a member of the special staff, the quartermaster must also obtain a thorough understanding of the tactical operations of his division. His understanding of the relation of the quartermaster plan of operation to the tactical situation which the plan will support enables him to provide most effectively the support required. Accuracy of information concerning the quartermaster installations serving him, the current quartermaster requirements throughout the division, and the capabilities and limitations of his unit are necessary to accomplish every mission assigned.
- (2) In his supervisory capacity, the quartermaster is responsible for the efficient operation of the division quartermaster service in accordance with policies and decisions of the division commander. This responsi-

bility includes the proper employment of quartermaster support available from higher echelons. He obtains supplies from sources designated by higher headquarters and controls the issue of such supplies to the division. Unit commanders within the division look to him for all quartermaster support. His responsibility for supply and service extends to attached units, as the division commander may direct (par. 17).

8. COMMANDER OF THE DIVISION QUARTEMASTER SERVICE

a. Command Capacity. As commander of the division quartermaster service, the quartermaster directs the administration and operation of all quartermaster troops (organic, other assigned and attached) in the division. In the infantry division, he is assisted in his command function by the executive officer and the company commander. In the airborne division, he is assisted in his command function by the executive officer, the division parachute maintenance officer, and the commanders of the quartermaster and parachute maintenance companies. In the armored division, he is assisted in his command function by the assistant division quartermaster, the executive officer, the commanders of the headquarters and medical detachments, and the commanders of the supply and field service companies.

b. Command Responsibilities. The quartermaster divisional unit is the command agency for any additional quartermaster troops that may be attached

to supplement organic strength. In his capacity as commander of all quartermaster troops in the division, the division quartermaster is responsible for their technical and tactical training and proficiency. He directs quartermaster operations, which include supply, salvage collection and evacuation, organizational maintenance of quartermaster equipment, limited laundry and bath service, initial identification and evacuation of the dead, and the administration of division labor pools when established. Since the facilities at his disposal are limited, efficient operation will require constant resourcefulness in the use of his equipment and of his troops.

9. ASSIGNMENT AND EXECUTION OF THE QUARTERMASTER'S MISSION

The quartermaster's mission is normally assigned in the form of approved plans and administrative orders. The quartermaster has the opportunity and responsibility of making recommendations to the division commander through members of the general staff in the preparation of these plans. Within the scope of his orders and within the limits of the resources at his disposal, he has also complete freedom of action to assure the best possible performance of his unit in fulfilling the mission assigned. Technical details of quartermaster operation are handled by personal conference or correspondence with the army quartermaster, in some instances with the corps quartermaster, with other members of the division staff, and with supply officers within the division. All other matters must be handled in accordance with announced division policies or through com-

mand channels. A thorough understanding of his relation to higher and lower echelons—and also of the assistance which may be obtained through careful liaison—is of constant importance in the division quartermaster's coordination with army and corps quartermasters, the division general staff, and unit supply officers of the division.

10. RELATION TO HIGHER HEADQUARTERS

a. General. Except in the case of certain task force operations, a division will form part of a corps operating either with an army in support, which is the normal situation, or independently. When a corps operates independently it assumes the character of a small army. The relation of the division quartermaster to the corps quartermaster in such a case is the same as for the army quartermaster.

b. Relation to the Army Quartermaster. The army quartermaster coordinates quartermaster operations directly with divisions, since corps normally acts as a tactical rather than an administrative headquarters. The army quartermaster's policies and decisions are disseminated through administrative orders issued by the army commander, and it is to the office of the army quartermaster and its agencies that requests and recommendations by the division quartermaster are usually submitted. Army is responsible for the adequate support of division in all matters of supply and service, including the establishment of army supply points and the provision of various nondivisional units for the support of division and corps troops. In general, the division quartermaster deals directly with the army quarter-

master or army quartermaster installations in the requisitioning of supplies. Requests for service support, however (such as additional transportation, labor, bath and laundry service, and graves registration), may be made to either corps or army, depending upon the allocation and control of such supporting units. Requests and recommendations which do not fall within the scope of announced division policies are submitted through command channels.

c. Relation to the Corps Quartermaster.

(1) *Supply.*

- (a) Since a corps operating as part of an army is not an administrative unit, corps is not ordinarily a link in the chain of supply except with respect to corps troops. Corps will not consolidate division requisitions for normally available items. When items of quartermaster issue are in short supply, however, the corps quartermaster may supervise their allocation or priority of issue to elements of the command. Requisitions for regulated items are transmitted through command channels unless credits have been established. Normally requisitions of class II and IV items that have an immediate and direct influence on tactical operations of the corps must be forwarded through corps headquarters.
- (b) Although division requisitions are not processed by the office of the corps quartermaster except as noted, the corps quartermaster sometimes acts in an advisory

capacity. The division quartermaster may look to him for information, assistance, and advice in obtaining supplies, especially short or critical items. The location of army forward supply points in the corps area will be made upon the corps quartermaster's recommendation. Division quartermasters, in turn, recommend supply point locations to corps so that the locations selected will be those most convenient for all units of the corps. Sites are selected which give access to the best roads leading to the front and which are within the range of operation of the division trains.

- (2) *Service.* Corps has few organic service elements. Quartermaster service, such as laundry, labor, bath, and graves registration, is provided by nondivisional quartermaster companies furnished by army. The companies that perform these services may be assigned or attached to a quartermaster battalion headquarters under the operational control of the army quartermaster. When a division has ready access to the corps service area, it may obtain service support directly from such units. Alternatively, service units may be attached to the corps in accordance with its mission and the number and types of divisions and corps troops to be supported. When so attached, the companies operate under the control of the corps quartermaster or may have sec-

tions attached to division by corps, at the discretion of the corps quartermaster and upon the request of the division quartermaster. Normally, laundry service is regularly allocated the division on an established schedule; facilities at corps bath points will be made available to division troops upon request; and additional labor, and graves registration support can be obtained upon evidence of need.

11. RELATION OF THE SPECIAL STAFF TO THE DIVISION GENERAL STAFF

As a member of the special staff, the division quartermaster must cooperate with members of both the special staff and the general staff. The general staff is headed by the chief of staff, to whom will be referred such problems of the special staff as cannot be resolved by coordination with the assistant chiefs of staff. The members of the general staff exercise no command authority but act in the name of the division commander as directed. They have the responsibility of coordinating, planning, and supervising special staff functions. The general staff will assemble staff recommendations into an integrated plan of operation for submission to the commander. The general staff will then coordinate and supervise the activities of the special staff in executing the approved plans. Although the quartermaster will coordinate his activities mainly with the division G4, quartermaster service is also related to the functions of the other assistant chiefs of staff.

12. RELATION TO G1

Quartermaster operations are related to the division G1 with respect to troop strength, morale, graves registration, and the processing of personal effects—

a. The strength of the division by units is a concern of the G1 in preparing the G1 Daily Summary, which serves as a guide to the G4 for the number of troops to be fed. Daily strength reports are the basis upon which unit supply officers submit requests to the division quartermaster for requisition and issue of class I supplies. In fast-moving situations where fluctuation in strength will be greatest, the data contained in the G1 summary assist the quartermaster in making the best possible estimate of troops requirements and in anticipating demands which may be made on his reserves.

b. The G1 is also charged with the supervision of morale services within the division. As a factor in morale, the quartermaster provides the troops with the best clothing, equipment, and rations that can be made available under the circumstances, including gratuitous issues of sundry articles, such as toilet articles, tobacco, and candy. The quartermaster is also responsible for maintaining an adequate supply of decorations so that awards can be made promptly when authorized.

c. The G1 is the assistant chief of staff responsible for the establishment of policies for burials, graves registration, and the handling of personal effects for the division. The quartermaster is charged with operational responsibility. Each divisional quartermaster unit is provided with a graves registration section, which may be supplemented by at-

tached or supporting troops. Through the G1, the quartermaster will also coordinate supervision of the graves registration activities of the division combat elements.

d. The quartermaster also coordinates with division G1 in liaison with civil affairs and military government matters.

13. RELATION TO G2

G2 is concerned with all phases of intelligence and with the enforcement of security measures among military personnel, including prisoners of war and civilian laborers as the situation may require. The quartermaster should coordinate with G2 in—

a. Examination and disposition of captured quartermaster-type enemy matériel.

b. Interrogation of prisoners of war as to the location of enemy supplies.

c. Prevention of sabotage of quartermaster installations.

14. RELATION TO G3

Responsibilities of the division G3 which affect quartermaster activities include personnel training, security of installations (par. 15c), maintenance of information on the tactical situation, traffic regulation and control for tactical movements, and area assignments to the major divisional units.

a. The quartermaster will coordinate the training program for quartermaster troops with the training schedules and requirements established by the G3.

b. Together with G2, the G3 maintains current situation maps and information from which the

quartermaster can coordinate with G4 in logistical planning for the support of the division. The quartermaster must at all times be informed of tactical concepts and decisions of the division commander which affect quartermaster operations.

c. The G3 is also concerned with traffic regulation and control for tactical moves. Although the quartermaster will coordinate directly with G4 in such matters as routing, schedule of movements, and traffic density, some coordination with the G3 may be required to insure the enforcement of priorities in accordance with the tactical plan.

d. Together with G4, the division G3 is concerned with quartering the division and normally with assigning areas to major units. The disposition of divisional units is important to the quartermaster in coordinating the location of division quartermaster supply and service installations.

15. RELATION TO G4

Since the procurement and distribution of supplies constitute the bulk of the work load of the division quartermaster in an active operation, his principal relation to the general staff will lie in coordination with the division G4. The G4 is responsible for the formulation of over-all policies and plans for the logistical support of the division and coordination of the logistical agencies of the division in the execution of such plans and policies. Among these logistical agencies, the quartermaster organization will be concerned with G4 decisions affecting supply procurement and transportation, maintenance of reserves, location of distributing points, protection

of property and prevention of pilferage, evacuation of the dead and prisoners of war, salvage and repair operations, and quartermaster services such as laundry and bath. The quartermaster, as a member of the special staff and as commander of the division quartermaster service, will provide recommendations to G4 for supply and service policies and procedures as they concern quartermaster operations. The quartermaster's relation to the G4 is as follows:

a. The quartermaster coordinates with G4 in the determination of requirements, procurement, storage (when required), and distribution of class I and III and quartermaster class II and IV supplies. The quartermaster also coordinates with G4 in the location of distributing points. G4 is responsible for policies directing the maintenance of reserves and the proper allocation of regulated items of supply within the division.

b. The quartermaster coordinates with G4 in the transportation of supplies by land, air, or water, including the planning, operation and control of quartermaster movements and traffic. The quartermaster will coordinate with G4 for evacuation of the dead and prisoners of war, as required. The quartermaster may also be required to coordinate in the transportation of personnel and in the handling of supplies, such as ammunition, which are not normally a quartermaster concern.

c. G4 is responsible for the protection of supplies including captured enemy matériel awaiting proper disposition against pilferage. The division quartermaster, through G4, may request additional personnel from G3 to guard captured stocks under quarter-

master control, or for the security of other supplies and quartermaster installations as the local situation may require.

d. The quartermaster coordinates with G4 in the collection and evacuation of salvage and in the maintenance and repair of quartermaster equipment.

e. The publication of shower schedules for the division is coordinated with G4 in liaison with the G1. G4 is also concerned with the operation of the organic bath and laundry facilities and with the allocation of such supporting services as may be provided by army or corps.

f. The quartermaster must coordinate with G4 in all logistical matters which are not covered by announced division policies and procedures. He must keep G4 informed of his activities and be prepared at all times to advise, recommend and assist in the formulation of logistical plans and policies.

16. RELATION TO UNIT SUPPLY OFFICERS

a. The major organizations of a division (such as regiments) are organically provided with service units. These service units include the necessary personnel and equipment to provide other units of their parent organization with quartermaster supplies and services as soon as made available by the divisional quartermaster unit. Service units are not composed of quartermaster troops, but they function as the final link in the supply chain which delivers needed supplies to the ultimate consumer—the troops in the field. The operation of service units is directed by organization supply officers.

b. Smaller units of the division (such as separate

companies) draw their supplies direct from division supply points. For these units, the quartermaster performs the final breakdown of supplies prior to issue. Such units will have some supply personnel and transportation for receiving and handling the supplies issued.

c. The relation of the division quartermaster to unit supply officers is in many respects similar to G4's relation to the quartermaster at a higher staff level. Just as general staff planning is based upon the technical knowledge and recommendations of the special staff, so the quartermaster depends upon the cooperation and information provided him by subordinate units in making estimates of division needs and in recommendations to G4 for the best utilization of quartermaster service and facilities. Unlike the G4, however, the quartermaster is also an operator in the supply chain. Although his command function does not extend to unit supply officers, they are charged with a similar operational responsibility in the requisitioning, drawing, transporting, and distributing of supplies for their respective units, as such supplies are made available at division supply points. Unit supply officers will also coordinate as directed by administrative orders in such operations as salvage and repair and in the use of bath and laundry facilities.

17. RESPONSIBILITY TO ATTACHED UNITS

Divisions in combat frequently operate with attached units. Normal attachments must be supported by the quartermaster in all classes of quartermaster supply and in all lines of quartermaster

service, just as if they were organic parts of the division. All attachments, including those added temporarily (such as truck companies attached to motorize a movement), will receive full quartermaster support unless the division commander otherwise directs. Sometimes quartermaster support to temporary attachments is limited to class I and class III supplies and burials only, leaving the attached units to obtain their own class II and IV supply and other services through the parent organization of which the units are normally a part.

18. INFORMATION ON QUARTERMASTER ACTIVITIES

Since the quartermaster mission contributes directly to the well-being and morale of the troops, it is desirable that personnel be familiar with the facilities and services provided. Divisional units obtain quartermaster support as directed by administrative orders and procedures published through command channels. However, the quartermaster can greatly assist in the promotion of effective liaison with divisional units by other, informal, means such as periodic personal visits, particularly to the combat units. Quartermaster installations such as distributing points and the division bath and laundry should be properly posted with guide signs and markers. Information of general interest on quartermaster activities may be published in the division newspaper. Depending upon the local situation, the quartermaster should utilize such other means of disseminating information on quartermaster activities as may be appropriate.

Section II. OFFICE OF THE DIVISION QUARTERMASTER

19. RELATION TO OTHER QUARTERMASTER ELEMENTS

a. Divisional Unit. Quartermaster organization at the divisional level is divided into the office of the division quartermaster and the operating units. The quartermaster's office is the staff unit that directs the administration of quartermaster supply and service for the division. The quartermaster's staff also supervises and coordinates the operations of the supply and service elements of the operating units (figs. 2, 3, and 4). The operating units, such as the supply, field service, and truck platoons, provide for the physical operation of quartermaster supply and service. Their internal administration and operation is directed by officers of the division quartermaster

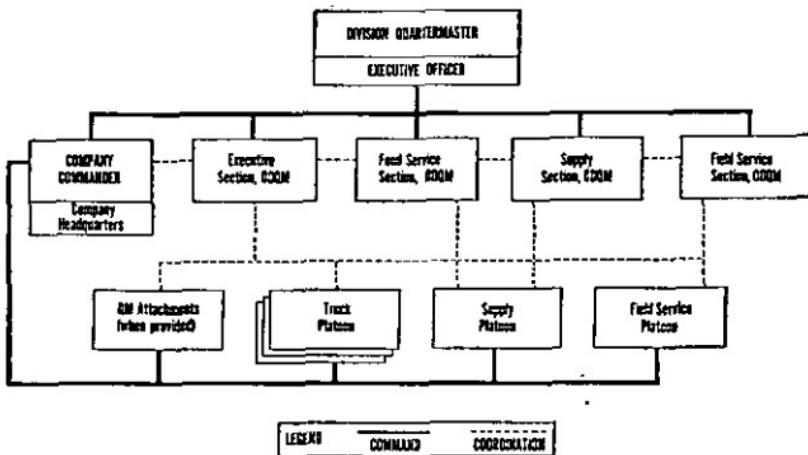


Figure 2. Typical organization of the office of the division quartermaster, infantry division, showing relation to operating units.

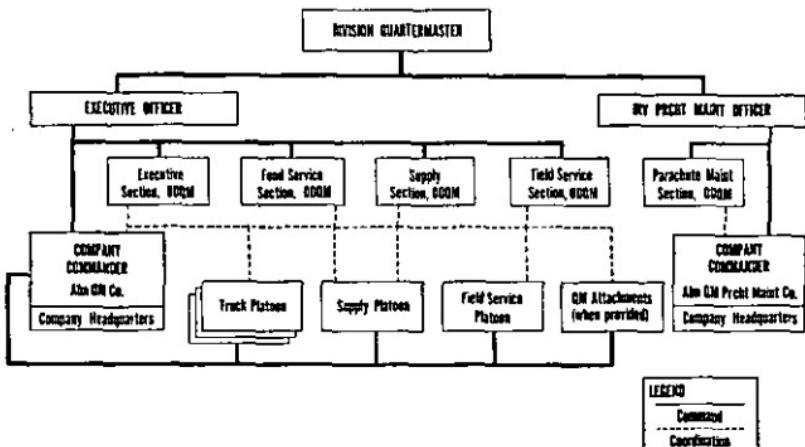


Figure 3. Typical organization of the office of the division quartermaster, airborne division, showing relation to operating units.

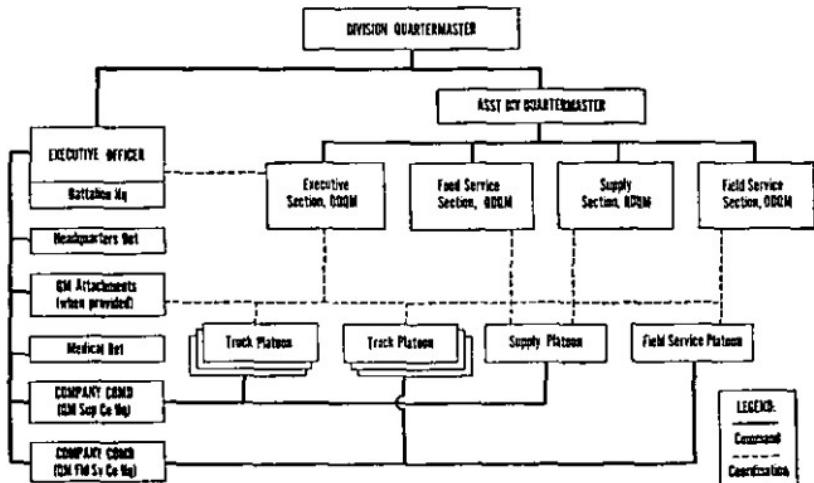


Figure 4. Typical organization of the office of the division quartermaster, armored division, showing relation to operating units.

command, under the control of the command headquarters (par. 26).

b. Attachments. The relation of the quartermaster's office to attached quartermaster units (when provided) is the same as for organic operating units. The quartermaster's staff supervises and coordinates the activities of all quartermaster attachments. The administration and operation of an attached unit is directed by officers of the unit.

c. Supporting Elements. Supporting quartermaster elements not attached to the divisional unit include all quartermaster units which are part of the chain of supply and service provided by higher echelons. The office of the division quartermaster must maintain, through constant liaison, accurate information on the location and services of those units that directly support quartermaster operations in the division.

20. ORGANIZATION

a. General. The nerve center of the division quartermaster service is the office of the quartermaster. This office must be so organized that it can maintain close supervision over all phases of quartermaster activity. The quartermaster depends on the efficient operation of his office to assist him in his staff duty of advising the division commander of the capabilities and limitations of organic, attached, and supporting quartermaster elements and of divisional requirements for service and supply. The exact organization of the quartermaster's office will depend upon the needs of the particular division it serves. (See also part two of this manual.)

b. Infantry Division. In the infantry division, the office of the division quartermaster is normally composed of four sections: executive, food service, supply, and field service (fig. 2).

c. Airborne Division. The composition of the quartermaster's office, airborne division, is similar to that in the infantry division, with the addition of a parachute maintenance section (fig. 3).

d. Armored Division. In the armored division, the composition of the quartermaster's office (fig. 4) is also similar to that in the infantry division.

21. EXECUTIVE SECTION

a. The operation of the executive section of the division quartermaster's office is directed as follows:

- (1) In the infantry and airborne divisions by the assistant division quartermaster, who is also the executive and operations officer (S3).
- (2) In the armored division by the assistant division quartermaster, who is also the quartermaster supply officer.

b. The functions of the executive section of the quartermaster's office normally include the following:

- (1) Preparing plans and establishing procedures for the technical operations of the division quartermaster service. (Military plans and procedures are the responsibility of the operations officer (S3).)
- (2) Coordinating through quartermaster command headquarters the activities of the ODQM with those of the operating units, organic and attached.

- (3) Coordinating the technical training program with schedules and requirements of the G3 and supervising the technical training of quartermaster personnel. (Tactical training is coordinated by the operations officer (S3).)
- (4) Maintaining the central files. (In the infantry and airborne divisions, the situation map and quartermaster service journal are also normally maintained by the executive section, ODQM. In the armored division, they are normally located in the battalion headquarters.)
- (5) Supervising and coordinating the use of quartermaster transportation, including the designation of prescribed truckloads.
- (6) In conjunction with the supply and field service sections, ODQM, and in coordination with the operations officer (S3) for security and defense measures, the selecting of sites for divisional quartermaster installations.

22. FOOD SERVICE SECTION

a. The operation of the food service section of the quartermaster's office is directed by the division food service supervisor.

b. Normally, the functions of the food service section are as follows:

- (1) Continuous planning and supervision of the division food service program.
- (2) Coordinating the training of division food service personnel.
- (3) Inspecting ration breakdown points.

- (4) Supervising unit messes for compliance with pertinent food service regulations and practices concerning proper requisitioning, food storage, accounting, unit stock levels, preparation, service, consumption, waste, and sanitation.
- (5) Making continuous study of food preferences and improvements in mess operation, including quality of food prepared, unit stock levels, and the most efficient methods of service.

23. SUPPLY SECTION

a. The operation of the supply section of the division quartermaster's office is directed as follows:

- (1) In the infantry and airborne divisions, by the division quartermaster supply officer.
- (2) In the armored division, by the assistant quartermaster supply officer under the supervision of the quartermaster supply officer. The assistant quartermaster supply officer is also supply officer for the battalion. The armored quartermaster supply officer is also assistant division quartermaster and heads the executive section of the quartermaster's office (par. 21).

b. The functions of the supply section normally include the following:

- (1) Determining division requirements for all classes of quartermaster supply.
- (2) Preparing schedules for the submission of unit requests and for the issue of supplies to drawing units at division supply points.

- (3) Editing unit requests for supplies in accordance with authorized allowances and consolidating or assembling division requisitions for transmittal to higher echelons.
- (4) Maintaining supply records and preparing forms needed at division supply points for the breakdown and issue of supplies.
- (5) Recommending reserve levels and determining requirements for the maintenance of authorized reserves.
- (6) Allocating or establishing, according to the direction of the G4, priorities for the issue of regulated quartermaster items and other quartermaster items in short supply.
- (7) Supervising the operation of supply elements, both organic and attached, of the division quartermaster organization.
- (8) Coordinating the division quartermaster salvage program and supervising the collection and disposition of salvage at the division quartermaster collecting point.
- (9) Coordinating in the disposal of captured enemy matériel.
- (10) Supervising the organizational maintenance and repair of items of quartermaster issue.

24. FIELD SERVICE SECTION

a. The operation of the field service section is directed by the quartermaster purchasing and contracting officer, who also acts as division graves registration supervisor.

b. The functions of the field service section of the quartermaster's office are normally as follows:

- (1) Recommending the bath schedule and planning for the most efficient utilization of organic bath facilities, in coordination with the services of attached or supporting bath elements when available.
- (2) Making similar recommendations for the use of laundry facilities.
- (3) Recommending standing operating procedures and plans for the guidance of the division graves registration service, in coordination with the services of attached or supporting elements and in coordination with the graves registration activities of all divisional units.
- (4) Maintaining bath, laundry, and graves registration service records, including records for the processing of the personal effects of deceased personnel when required.
- (5) Supervising the operation of service elements of the division quartermaster organization, both organic and attached.
- (6) Handling division quartermaster purchasing and contracting requirements.

25. PARACHUTE MAINTENANCE SECTION

a. The operation of the parachute maintenance section of the quartermaster's office, airborne division, is directed by the division parachute maintenance officer. The parachute maintenance officer is a member of the airborne quartermaster parachute

maintenance company, but he also acts as an assistant to the division quartermaster.

b. The functions of this section normally include the following:

- (1) Coordinating the requisitioning, storage, and issue of all authorized quartermaster air equipment handled by the parachute maintenance company for the operation and training of the division.
- (2) Supervising the maintenance and repair of parachutes and parachute equipment issued by the parachute maintenance company for divisional use.
- (3) Supervising the packing and rigging operations of the parachute maintenance company.
- (4) Recommending to the division quartermaster plans and procedures for the efficient operation of the parachute maintenance company and providing liaison between the company and the ODQM.

Section III. EMPLOYMENT AND TRAINING OF PERSONNEL

26. QUARtermaster COMMAND

a. *General.* The employment and training of personnel is directed by officers of the quartermaster command. The employment of personnel is divided among the office of the division quartermaster, command headquarters, and the operating units. However, the administration and operation of all quar-

termaster personnel, both organic and attached, is under the control of the command headquarters and is directed by the division quartermaster in his capacity as commander of the division quartermaster service.

b. Command Headquarters.

- (1) *Organization.* The division quartermaster is directly assisted in his command function by the senior officers of the command. In the infantry and airborne divisions, the command headquarters for the supply and service elements of the quartermaster company is located in the company headquarters (figs. 2 and 3). In the armored division, battalion headquarters is the command agency for the divisional quartermaster organization (fig. 4).
- (2) *Functions.* In the employment and training of quartermaster personnel, the command headquarters has two broad functions. It handles details of the overhead administration of the divisional quartermaster unit. It also provides the command relationship between the staff activities of the ODQM and the operational activities of the supply and service elements. The specific functions of the headquarters and of the officers of the quartermaster command are included under organization and operation in the three types of divisions (part two of this manual).

27. RESPONSIBILITY FOR TRAINING

Responsibility for the accomplishment of the training program rests, first, with the division quartermaster and his staff and, secondly, with the junior officers and members of the cadre. The training program is coordinated through the quartermaster S3 officer, who is also the executive officer of the quartermaster unit. Technical training is supervised by members of the quartermaster's staff in those operations of supply and service which are the direct responsibility of their staff sections. The staff should at all times be alert to the discovery of methods that will increase the efficiency and speed of technical operations. Officers of the command are responsible for instructing their men in the use of weapons and in all matters pertaining to security and defense. Platoon leaders assist the senior officers by exercising direct supervision over the training of all platoon personnel.

28. THE CADRE

a. The cadre is a skeleton organization of enlisted men around which the quartermaster unit is formed. Ideally, each of the cadre members will be thoroughly trained before joining the unit and will be qualified both to perform his specific duties and to aid in training other members of the unit. Building up within the cadre an enthusiastic interest in the training program is the best possible means of assuring the program's success. Accordingly, the company commander should first acquaint himself thoroughly with the capabilities of the members of

his cadre and assign to each of them specific duties in training unit personnel.

b. When each member of the cadre has been examined to determine his adequacy for the job to which he has been assigned, replacements should be trained for those members who prove incapable or inefficient. Also, since field conditions are in a constant state of flux and an elastic organization is essential, need for the further replacement of key men should be anticipated and an understudy provided for each of the cadre members.

c. Each member of the cadre should have:

- (1) Technical training and experience in his specialized task.
- (2) Ability to train other men for specialized tasks.
- (3) Thorough training in basic military subjects necessary to security and defense.

29. TRAINEES

a. The degree and nature of the training received by personnel prior to their assignment to the quartermaster unit will vary. In formulating the training program, the division quartermaster through the S3 and unit commanders should have a detailed inventory made of the training each man has had, from which a plan may be devised that will overcome individual deficiencies. This will help to prevent unnecessary duplication of certain phases of the program and will permit a better allocation of personnel to the jobs for which they are best suited.

b. Because personnel should be rotated within the unit to new job assignments at periodic intervals, an adequate program should include not only training for the immediate job but also training which will prepare each man for more responsible duties. In the course of technical training, the aim should be that every man acquire a thorough knowledge of the duties of at least one other member of the organization. Thus, reserves are built up to replace key men who later may be called to form the cadre for newly activated units or for other reasons may be lost to the organization. Commissioned and non-commissioned officers must closely supervise the work of trainees until they are satisfied that every man understands his assigned tasks and performs them properly.

c. Thorough training should also be given in discipline, local security, defense methods, camouflage, reorganization after attack, and movement of equipment and personnel. Since under combat conditions improvisation is frequently necessary, procedures should be formulated for emergency conditions and personnel trained in their execution. Officers of the command should instruct their men in demolition methods to be employed if enemy action forces them to abandon property.

d. Besides training in technical and tactical skills, there must be a constant emphasis on the need for physical fitness. Experience under combat conditions has proved that the maintenance of quartermaster service in the field is sometimes as much a matter of physical stamina as of technical and military knowledge.

30. TRAINING OBJECTIVE AND PROGRAM

a. The object of training is to maintain a high level of technical proficiency and emphasis on physical fitness, adequate measures of security and defense, and military discipline.

b. To achieve the training objective, the division quartermaster must plan and conduct a program of training that will maintain the skills and physical fitness of all personnel under his command. Minimum standards of basic training are prescribed in Army training programs. On-the-job training and defense and security exercises and maneuvers are the principal means of attaining and maintaining technical and tactical efficiency. Special attention must be given to the supplementary training of replacement troops in techniques peculiar to the local situation. In the theater of operations the training of service units is normally just enough to maintain basic standards; however, periods during which a division is not committed should be carefully utilized by setting aside part of each working day, with a definite training objective to be attained by a specific date. During such periods, routine supply and service operations should not be permitted to interfere with the training program.

c. Materials to assist in the conduct of training are listed in appendix I.

CHAPTER 3

LOGISTICS—SUPPLY

Section I. PRINCIPLES OF OPERATION, SUPPLY RESPONSIBILITY, REQUIREMENTS, PROCUREMENTS, AND STORAGE

31. PRINCIPLES OF OPERATION

Principles of supply operation apply to all conditions of combat. However, the application of any one supply principle may vary as the situation changes. Specific procedures should conform to the following principles:

a. Supply and tactics are inseparably connected. The tactical plan and the supply plan are prepared in close coordination. The tactical plan must be one which can be adequately supplied, and the supply plan must be adapted to provide maximum support. A well-conceived tactical plan is likely to fail unless it is supported by a sound supply plan.

b. Supply plans should be simple and continuous. The simple plan is usually the best. Continuity of supply requires a constant study of future needs and timely delivery of required supplies.

c. Supply plans should have flexibility and provide for mobility to meet rapidly changing situations. Flexibility is attained by the decentralization of operations and control and by the careful location

of supply points. Mobility is attained by providing a number of small distributing points, keeping supply vehicles moving, and having forward supply installations prepared to move.

d. The impetus of supply is from the rear toward the point of consumption. Each element in the supply chain pushes supplies forward to or within the reach of elements in front, and each element is responsible for making known its needs to the next supporting echelon. Requirements should be forwarded in sufficient time to permit supplies to be furnished by normal methods. This includes time for making necessary arrangements to draw and distribute supplies.

e. Adequate supplies are provided without creating an immobilizing excess. Combat separates units and individuals from their source of supply. This frequently requires units and individuals to be self-sustaining. To meet these conditions, supply needs are anticipated and reserves are carried on individuals and vehicles. However, an increase in the amount of supplies carried reduces mobility. The solution that gives reasonable certainty of supply yet retains tactical mobility is adopted. Effective application of supply economy aids mobility by decreasing the quantity of supplies needed to keep the unit in operating condition.

32. SUPPLY RESPONSIBILITY

a. General. Quartermaster supply at the divisional level includes the determination of requirements for and the procurement, storage (where necessary), and issue of quartermaster supplies and

equipment. In supply operations, higher headquarters is responsible for establishing supply points convenient to the division. Normally, the division quartermaster will use his trucks and labor to draw supplies in bulk, establish distributing points, and issue supplies to the using units of the division. It is the responsibility of the unit commanders to make known their needs to the quartermaster, to draw unit supplies from division supply points, and to direct their own internal supply.

b. Supply Economy. Supply economy is the constant care, preservation, and conservation of all supplies and equipment. It promotes combat efficiency and is a function and responsibility of command. Commanders facilitate supply economy by carefully considering their requirements before submitting requests, by controlling and conserving supplies from initial receipt until final disposition, and by avoiding the accumulation of excess stocks. Supply economy also includes proper maintenance, the collection and evacuation of salvage and captured matériel, and the indoctrination of all personnel with the importance of supply.

33. SUPPLY REQUIREMENTS

a. Supply requirements include all supplies needed for the equipment, maintenance, and operation of the division for a given period of time or to complete a specific operation. Normally, requests are based upon authorized allowances, upon estimates of current consumption in class I and class III and of replenishment requirements in class II and IV, and upon shortages in authorized reserves. Authorized

allowances, such as are prescribed in tables of organization and equipment and equipment modification lists, are used in computing initial equipment requirements. As modified by current strength and expenditure reports, they also provide the basis for computing current consumption and replenishment requirements and for requesting authorization from higher echelons for reserves adequate to sustain the minimum level of supply.

b. It is essential that the division quartermaster keep an up-to-date file of T/O & E's. Changes should be promptly and accurately recorded both for the organic units of the division and for all normal attachments. Tables of organization are not generally used in determining class I requirements, since daily strength for ration reports form the immediate basis for requisitions and more accurately reflect current unit strengths. Tables of equipment, however, are always required in the editing of unit requests for class II and IV items, and they provide valuable information on vehicular and fuel container allowances needed for logistical planning in class III operations.

34. PROCUREMENT FROM NORMAL SOURCES

a. *Supply by Requisition.* When supply requirements have been determined, each class of supply is obtained by a system of requests upon higher headquarters. Shipments from higher echelons, based on the processing of requisitions from using units, are the principal source of all supply. However, each class of supply has its own characteristics and

presents its own special problems, both of which will determine the distribution and flow of supplies.

b. Supplies Obtained Through Repair. An important supplementary source of supply is the repair of damaged items. Although tables of organization and equipment and other tables governing the issue of supplies constitute the authority for issue, actual issues are governed by availability and limited to actual need. The obtaining of supplies through repair is made possible by proper supply economy and maintenance and by salvage operations. Maximum service life from each item through careful maintenance and the maximum use of salvage through timely repair are sometimes important sources for items in short or critical supply and help to reduce the demands for new items.

35. PROCUREMENT FROM LOCAL RESOURCES

When emergency or unusual needs cannot be met through regular channels, civilian resources offer a further means of supply. (For local procurement of facilities and service, see par. 136.) Purchasing and contracting are field service functions, controlled in policy and amount. In the theater of operations they may be widely utilized, especially for supplies involving much tonnage. On the divisional level, however, every effort should be made to obtain needed supplies from normal sources. Local procurement can prove less feasible for several reasons: The amount that a division purchasing and contracting officer may expend is definitely limited. Further, policies governing local procurement in a friendly or allied country differ from those in an enemy coun-

try. In all cases such policies must take into account the needs of the local population. Consequently, arrangements are usually centralized through the administration of higher echelons, which make indigenous production available through normal channels.

36. LOCAL PROCUREMENT IN FRIENDLY COUNTRIES

a. Indirect Procurement. In friendly countries, indirect procurement is the usual method of securing equipment and supplies. A requisition is placed directly on the local civil authority, who, as agent for his government, purchases the supplies for United States forces. Price and payment in such cases is a matter between the friendly government and the vendor. Although but a third party to the contract, the purchasing and contracting officer must locate the supplies. Indirect procurement is made possible by long-range financial agreements between the respective governments.

b. Direct Procurement. When local civil authority has not been organized to handle requisitions, the desired items may be requisitioned by the purchasing and contracting officer directly from the vendor. Payment will then be made by the friendly government for credit from the United States.

c. Direct Purchase. In cases where the requisitioning process requires too long a time for certification, direct cash purchase may be made for small amounts. A class "A" agent officer accompanies the purchasing and contracting officer and pays cash at the time of sale, or the purchasing and contracting officer may be authorized to perform both functions.

37. LOCAL PROCUREMENT IN ENEMY COUNTRIES

Methods of procurement from local resources in enemy countries are determined mainly by the tactical situation. In combat zones during actual hostilities, enemy property necessary for military use may be confiscated or seized by any officer—not necessarily a purchasing and contracting officer. During periods of postcombat occupation, requisitioning is the method most often used for procuring local supplies.

a. Confiscation. Confiscation is the authorized seizure of property belonging to the enemy state. Supplies or facilities belonging to individuals or to enemy charitable, educational, civic, or religious institutions, and capable of direct military use by the United States Army, may be seized. Procedures will be in conformity with the rules of land warfare and regulations of higher authority. Unauthorized seizure of property is punishable as looting.

b. Requisitioning. Requisitions may be placed on local authorities or directly upon vendors, as described in paragraph 36*a* and *b*. In enemy countries, however, prices for requisitioned items are fixed usually by the buyer and the owner has no option in the transaction. Credit to the enemy state or individual is deferred.

c. Purchase. In exceptional cases, supplies in limited amounts may be bought outright.

38. STORAGE

Normally, the greatest part of all classes of supply is requisitioned to fill immediate needs. Conse-

quently, storage problems on the divisional level are mainly concerned with the selection of sites for distributing points that will offer adequate cover and security from attack while breakdown and issue operations can be performed. Except in the case of class III items, which entail certain safety and fire precautions, the handling of reserve supplies is not a storage problem. Class I reserves are carried in unit kitchens and vehicles and in trucks and trailers organic to the quartermaster unit. Reserves of class II supplies are limited and usually consist of such fast-moving items as socks, trousers, shirts, and blankets. Actual storage is necessary only when normal channels of supply are not available and a larger reserve must be stocked, as in certain amphibious or airhead operations.

Section II. SUPPLY DISTRIBUTION AND SUPPLY ELEMENTS OF THE DIVISION QUARTERMASTER SERVICE

39. DISTRIBUTION OPERATIONS

Distribution operations at the divisional level include procedures for the requisitioning, maintenance of stock control and other supply records, and issue of supplies. Supply administration, including the processing of requisitions and the maintenance of records, is a staff function of the office of the division quartermaster. The issue of supplies is provided by the operations of the supply platoon organic to quartermaster organization in each division.

40. REQUISITIONS

a. Form of Requisitions. In general, it is a basic principle that authorized supplies are issued to a using unit in accordance with its expressed needs unless conditions of operation or availability of resources dictate other procedures. Using units may make their needs known through formal requisitioning procedures and by strength reports, status reports, expenditure reports, or other similar reports. If supplies are available these reports have the force of requisitions. If items are in short supply, the reports form the basis for allocation or shipment under priorities as the items become available. Informal requests, such as a message transmitted by any means of signal communication, an oral request, an empty gasoline can, or an estimate made by the quartermaster or by the supplying agency in the absence of specific requests from subordinate units, are further means of requisition which may be used in fast-moving situations where the element of time precludes the use of more formal methods.

b. Supply Action. Upon receipt of requisitions, the supply agency determines the availability of the items required. For any item not available for shipment or issue in the usual time, a notice is sent to the requisitioning agency stating the date of expected availability, that substitution has been made, or that the item will not be available. Requisitions normally are filled by the supply agency closest in the chain of supply to the troops needing the supplies. If such an agency cannot fill a requisition immediately, it furnishes what is on hand, extracts the unfilled items to the next higher supply officer, and notifies the

headquarters from which the requisition was received when shipment may be expected.

41. SUPPLY RECORDS

a. Unit Accounts. Supplies in the hands of using units are not included in stock control procedures established for supply agencies within the theater. Commanders establish and supervise stock control procedures within their commands. In the theater of operations, such records as are necessary for property accounts at the divisional level will be required by administrative order and not, as in the Continental United States, by current property regulations. However, prior to entry into actual combat, company property books are normally maintained in much the same way as required in the Continental United States. Immediately after withdrawal from combat, inventories will be made and property books reestablished. During combat, unit commanders must continue to insure that equipment and supplies are properly utilized.

b. Division Quartermaster Accounts. All echelons of supply maintain a back-order system which reflects the status of unfilled items. This includes total quantities due-out as well as quantities due-in on each unfilled requisition. Quartermaster supply records at the divisional level will be limited and are usually mainly in the administration of class II and IV supply. Records of the current status of class I and III supplies are seldom necessary for stock control, except with respect to the maintenance of reserves, but they are necessary to assist the quartermaster in his special staff function as advisor to

the commander on all requirements for quartermaster supply. Such records and accounting procedures as normally may be employed are discussed in connection with each class of supply.

42. SUPPLY PLATOON

a. Organization. The supply platoon comprises platoon headquarters, class I section, class II and IV section, and class III section.

b. Operation. The supply platoon is the operating element that handles the distribution of quartermaster supplies for the division. Its activities include the drawing, breakdown, and issue of all classes of quartermaster supply; the handling of reserves; the establishment and operation of distributing points; and supplementary operations, such as reclamation, maintenance and repair.

c. Relation to ODQM. The operations of the supply platoon are under the supervision of the quartermaster supply officer, who is chief of the supply section of the quartermaster's office.

43. PLATOON HEADQUARTERS

The platoon leaders are responsible under the company commander for directing the operations of the platoon and for training platoon personnel in both the technical phases of supply operations and in measures for security and defense. They may be assigned such other duties by the company commander as the situation demands.

44. CLASS I SECTION

a. *Organization.* The class I section is composed of the following men, who operate the class I distributing point:

- (1) *Subsistence sergeant.* The subsistence sergeant is the section leader in charge of class I operations. He supervises and coordinates the operations of the section in drawing bulk supplies and in making equitable distribution to using units of the division.
- (2) *Ration distribution supervisors.* The ration distribution supervisors are assistants to the subsistence sergeant. They supervise the receipt, proper loading and unloading, and breakdown of rations, including the inspection of supplies for breakage, spoilage, or other damage.
- (3) *Meat cutter.* The meat cutter cuts and weighs meat and cares for the meat-cutting tools. Fresh meat procured locally and processed in quantity is normally obtained for divisional use through regular supply channels (pars. 35 and 79e). The meat cutter's work is generally limited to the weighing and cutting of carcass meat for equitable distribution.
- (4) *Supply clerks and checkers.* The supply clerks and checkers are responsible for co-ordinating the receipt, breakdown, and issue of rations with authorized quantities and allowances, as recorded on appropriate breakdown and issue forms. The supply clerks also maintain records of overissue

and underissue, if required. The checkers assist in checking allowances and perform other clerical duties in the operation of the class I distributing point.

- (5) *Warehousemen.* The warehousemen are general laborers who handle the loading and unloading of subsistence supplies.

b. Operation. The operation of the class I section is covered in chapter 4.

45. CLASS II AND IV SECTION

a. Organization. The class II and IV section is composed of the following men, who operate the class II and IV distributing point and the divisional quartermaster salvage collecting point:

- (1) *Supply supervisor and assistant supply supervisor.* The supply supervisor is the section leader in charge of quartermaster class II and IV supply and general salvage operations of the section. He supervises the receipt, transportation, storage (where necessary), and issue of individual and organizational supplies and equipment. He also supervises the processing and evacuation of salvage and of items turned in for replacement or repair. He is assisted in these duties by the assistant supply supervisor.
- (2) *Supply clerks and checkers.* The supply clerks and checkers perform clerical duties connected with the supply, salvage, and maintenance records of the section. They assist in the breakdown and issue of class II and IV supplies and equipment, accord-

ing to authorized allowances. They also assist in the inventory and handling of reserves and the preparation of records and reports on salvaged and repaired items, as required.

(3) *Salvage inspectors.* The salvage inspectors assist in the receipt, classification, and proper disposition of salvage. They classify salvage with respect to the supply service originally issuing each item of equipment, sort quartermaster items into appropriate salvage classes, supervise salvage evacuation, and perform other duties connected with the operation of the quartermaster salvage collecting point.

(4) *Repairmen.* The office machine repairman inspects, cleans, adjusts, and makes repairs to standard types of office machines. The general equipment repairmen provide maintenance and repair services for other items of quartermaster equipment such as, for example, field ranges.

b. *Operation.* The supply operations of the class II and IV section are covered in chapter 5. Salvage and repair operations are discussed in paragraphs 53-56.

46. CLASS III SECTION

a. *Organization.* The class III section is composed of the following men, who operate the class III distributing point:

(1) *Petroleum sergeant.* The petroleum sergeant is the section leader in charge of class

III operations. He supervises the receipt, transportation, storage, and issue of all petroleum supplies and assists in making estimates for the maintenance of the class III reserve.

- (2) *Petroleum supply foremen.* The petroleum supply foremen are labor foremen who act as assistants to the petroleum sergeant. They supervise and assist in loading and unloading operations and the inspection, tallying, dispensing and issuing of supplies, including the enforcement of fire and safety precautions for the handling of petroleum products.
- (3) *Petroleum dispenser operators.* The petroleum dispenser operators operate, and provide organizational maintenance for, the gasoline and motor oil dispensing pumps. When not required for dispensing operations, they assist in the handling of packaged petroleum products.
- (4) *Warehousemen.* The warehousemen provide general labor for the loading, unloading, and issuing of petroleum supplies.

b. *Operation.* The operation of the class III section is covered in chapter 6.

Section III. REQUIREMENTS FOR DISTRIBUTING POINTS

47. GENERAL

a. The division quartermaster normally operates distributing points for class I and class III supplies.

A separate class II and IV distributing point may also be established, especially when clothing exchange facilities can be provided. Otherwise, small stocks of class II supplies carried as a reserve by the divisional quartermaster unit are generally made available at the class I distributing point, under the operation of the class II and IV section.

b. The requirements outlined in paragraphs 48 through 52 are generally applicable for the selection and layout of distributing points for both division class I and class III operations. Special requirements for class I distributing points are described in paragraph 68, and for class III distributing points in paragraph 124.

48. SITE SELECTION AND RECONNAISSANCE

a. For reasons of efficiency and fuel economy, distributing points must support the combat units of the division as closely as practicable. Close support sometimes requires the operation of more than a single point of supply. Because of the greater possibility of discovery and attack by the enemy, advanced distributing points must be picked carefully and only after preliminary reconnaissance. The division quartermaster, or a designated responsible officer or noncommissioned officer, should make a personal reconnaissance of the roads to be traveled between the army supply point, the proposed distributing point and the drawing units before the divisional point is placed in operation. If a personal reconnaissance is not possible, the responsible officer should make a thorough study of the situation map for the area in which the vehicles are to operate.

b. The principal considerations affecting the choice of a site are as follows: mission, relative position, road net, defensibility, security from observation and attack, and adequate area for operations layout.

49. RELATIVE POSITION

a. The most important requirement for any point of supply is accessibility to the units it serves. No matter how secure from attack or well laid out for operations the distributing point may be, if its services are not readily available, the quartermaster will have failed in his mission of supply. The location must, then, be first determined by the position occupied by drawing units, or probable location of drawing units when the distributing point is to open, and by the general arrangement of the existing road net in the area. Consideration must be given to proximity to the main supply route. In general, locations forward of the assigned area of the quartermaster bivouac will be advisable, since the length of haul for unit trains is thereby lessened. Consideration must also be given to the relative position of army supply points. In most cases, however, it is better that resupply of the division should involve a longer haul from the army supply point than that subordinate units should come long distances to draw their supplies.

b. Secondary considerations are the relative position of other distributing points and accessibility to the bivouac of the quartermaster unit. Since using units must draw rations daily, it is often convenient if the class I and class III points are located

in the same general vicinity, when security measures will permit.

50. ROAD NET

a. The site should be adjacent to the main supply route or connected with it by a suitable road net. There should be both incoming and outgoing roads at the distributing point, so that traffic movement will be expedited and concentration of vehicles avoided. A site should be selected where new roads will not have to be created. New roads will advertise the position to the enemy. Whenever practical the distributing point should be located at least a mile from the bivouac area of other troops, since the congestion may advertise both areas to the enemy.

b. Particular attention should be paid to bridges and possible alternate routes between the army supply point and the distributing point and using units. Alternate routes may then be used if bridges are destroyed or the preferred road is made impassable to vehicles by enemy action or weather conditions.

c. The better the road surfaces available, the heavier the vehicles may be loaded and the greater the saving of transportation time and equipment. Good road service also requires natural drainage for inclement weather and surfaces hard enough not to be subject to miring. The division engineer will provide information on the usability of the roads under various weather conditions.

d. Traffic in and near the distributing point must be rigidly controlled to avoid congestion. Signs should be posted between the main supply route and the distributing point and guides utilized where

necessary. Care must be exercised, in posting guides and signs outside the distribution area, that there is no conflict with the division traffic circulation plan.

51. SECURITY FROM OBSERVATION AND ATTACK

a. Actual field conditions will seldom provide a supply site that satisfies every requirement. Security from enemy observation and attack is of basic importance. Security from enemy aerial observation is partly dependent upon the degree of air superiority. Security from enemy artillery fire will require the protection of either distance or defilade. Further protection can be obtained from the use of natural cover, camouflage, and dispersion.

b. It is desirable that the site chosen should afford as much natural cover as possible. Even where natural cover is not entirely sufficient to conceal operations, it can present an excellent basis for the supplementary use of camouflage. The use of camouflage, however, must in all cases be supported by constant camouflage discipline if the area is to remain inconspicuous. Where little natural cover exists to hide the operations of the distributing point, dispersion must be employed. Even with adequate concealment, the maximum dispersion of all vehicles, personnel, and equipment commensurate with the effective control of operations is a further safeguard against the action of enemy planes or artillery.

52. ADEQUATE AREA FOR OPERATIONS LAYOUT

The area of operations must be adequate for internal traffic, with space for the dispersion of supplies

at some distance from the arterial highway. The special requirements for layout are discussed in connection with class I and class III operations.

Section IV. RECLAMATION, MAINTENANCE, AND REPAIR

53. SALVAGE RESPONSIBILITY

a. Two main types of salvage are handled by divisional quartermaster units—quartermaster clothing and equipment in need of repair or worn out to a degree that it is no longer serviceable and material collected from road and battlefield clearance. The quartermaster is concerned in all salvage activities of his division and is responsible for the establishment and operation of the division collecting point. Normally, however, his responsibility will be limited to the receipt of salvaged items and the evacuation of these items to army collecting points, since divisional quartermaster units have neither the personnel nor equipment for extensive salvage operations. Large quantities of salvage will require the support of special salvage units. The quartermaster is directly responsible, however, for assisting divisional units in obtaining necessary repair service for items of quartermaster clothing and equipment (par. 56b). He may also cooperate in battlefield clearance operations, when personnel and trucks are available. In general, salvage does not cease to be a responsibility of the technical service concerned so long as the items can be used for the original or similar purpose by repair, reclamation, or modification.

b. The responsibility for the collection of salvage does not rest solely on service units, but on combat units and all individuals. Unit commanders share responsibility for salvage discipline, including the collection of salvage from their own units and evacuation of salvage to the division collecting point. Battlefield and road clearance is also a responsibility of command and is not directly a divisional quartermaster service.

54. SALVAGE OPERATIONS

a. The prompt collection and the utilization of salvage which has been abandoned on the battlefield or in bivouac are important measures in the conservation of military supplies. Quartermaster salvage operations, including the receipt and evacuation of such matériel and the reclamation of quartermaster items, make available substantial quantities of equipment and supplies for issue and reissue; conserve labor and materials; and afford relief to transportation facilities. In order to accomplish results with a salvage program, the division quartermaster must do everything possible to dispel the idea that what is salvage is junk. He must demonstrate by his own endeavor and cooperation with units of the division that salvage is Government property worth recovering and reconditioning.

b. The primary requisite in a division salvage operation is the establishment of a salvage collecting point. In order to protect the items collected, this collection point should be under cover and on a floor or dry ground whenever possible. Normally, the

location of the collecting point will be at or near the class I distributing point, since salvage can be most readily returned by unit trucks coming to pick up rations.

c. Units of the division evacuate salvage to the division collecting point in any available transportation, usually empty supply vehicles returning to the rear. From the division salvage collecting point, salvage is further evacuated under quartermaster supervision to army salvage collecting points. Certain salvage such as ammunition, vehicles, and signal equipment is normally handled through supply and maintenance channels of the technical service concerned. Since the army quartermaster normally operates salvage collecting points at army class I supply points, division quartermasters can effect transportation economy by removing salvage to these collecting points on the trucks of the division ration train making the daily haul. The tops on trucks carrying salvage should be kept up in order to protect the load from rain and dust.

55. SALVAGE PROCEDURE AT THE DIVISION COLLECTING POINT

a. The organization of the class II and IV section includes salvage inspectors and other qualified salvage personnel who normally operate the collecting point and who may train filler personnel to assist in salvage classification. The sorting of sizable quantities of salvage requires the labor of more men than a division quartermaster will have available for salvage operations. In such cases, salvage items should be evacuated as promptly as possible to army col-

lecting points for subsequent inspection and disposition. When conditions permit, however, such elementary classification should be made at the division collecting point. This action will make items of clothing and equipment in short supply available to division troops.

b. Collected items should be sorted within 24 hours. This is especially important under hot, humid climatic conditions, when damp or rotted items will damage others. Salvage should be sorted into three classes—

- (1) Serviceable, or items that can be reissued either immediately or after laundering.
- (2) Repairable, or items which are damaged but can be reclaimed by means the division quartermaster has at hand.
- (3) Unserviceable, or items that are useless except as scrap or which can be repaired only at installations not immediately available to the division.

- c.* (1) Serviceable items are held in the division quartermaster's reserve, unless they are so numerous as to be substantially in excess of his authorized level plus what can be issued on unfilled unit requisitions. Surplus items must be evacuated to army salvage collecting points; unused surplus items should be consigned directly to the class II and IV section of the nearest army depot, or other disposition made as is directed by higher headquarters.
- (2) Repairable salvage should be reconditioned by quartermaster personnel and then dis-

posed of in the same manner as serviceable salvage.

- (3) Unserviceable salvage, including items which cannot readily be repaired by the quartermaster unit, should be evacuated to the nearest army salvage collecting point.

56. MAINTENANCE AND REPAIR

a. Unit Equipment. The division quartermaster has command responsibility for the maintenance of all equipment of the quartermaster unit. Systematic inspection and correction of incipient failures before they occur or develop into major defects, and the regular servicing of equipment to insure satisfactory operation, are the most important measures in preventive maintenance. Organizational maintenance includes such normal repairs as can be managed with the time, spare parts and tools available, and with the capabilities of unit mechanics. More extensive repairs will be performed by field or depot maintenance organizations.

b. Quartermaster Issue. The division quartermaster is also responsible for the maintenance of all quartermaster items issued to other units of the division. This is accomplished by the exchange of serviceable items from the division reserve for like items in need of repair, or by the receipt of damaged items for reconditioning and subsequent return to the user after repairs are completed.

- (1) Quartermaster clothing and equipment requiring such minor repairs as can be performed by personnel of the quartermaster unit, may be accepted at the division class

II and IV supply point and serviceable items issued from the class II reserve. Care should be taken that new articles are not issued in exchange for similar serviceable items which are merely soiled. After the damaged items have been repaired, they are returned to the reserve stock.

- (2) Items that are turned in for repair and return to the user, such as shoes, clothing, tentage, and other equipment of quartermaster issue, are sent to army semimobile reclamation and maintenance units for repair and return. Clothing in need of repairs that cannot be made by normal means at hand should be turned in through salvage channels. Other equipment should be received and delivered to the appropriate army repair shops. Field range parts when worn out may be exchanged at these shops. Typewriters, field range assemblies, immersion type heaters, and similar items can often be replaced by loaned articles from the repair shop while the work is being done. Particular care should be taken that heavy canvas is kept dry when not in use and is repaired at the first sign of deterioration.

57. CAPTURED MATÉRIEL

- a. Captured matériel involves special problems of segregation, inspection, and evacuation to the proper authorities. Segregation includes the preliminary screening of matériel, especially new, unusual or dangerous items, and usable enemy supplies and

equipment. According to the character of the matériel, it is turned over to the division special staff officer of the supply service directly concerned.

b. Enemy matériel that normally would fall under the supervision of the quartermaster is handled much like salvage. Quantities that are small in respect to weight or size should be evacuated by the capturing unit to the division salvage collecting point. Large amounts of matériel will be safeguarded by the capturing unit until disposition is directed by G4, or until personnel is provided the quartermaster so that he can assume this responsibility. When enemy supplies are found in any quantity, such as in a warehouse or dump, it is more feasible for the quartermaster to place them under guard and to request their removal by corps or army than it is for him to attempt their evacuation with his own limited transportation facilities.

c. Since enemy matériel provides an excellent source for technical intelligence, it is important that new types of matériel reach the proper authority promptly without being stripped of essential components. Where matériel of new or unusual design is involved, the G2 and army quartermaster technical intelligence teams should be immediately notified and evacuation expedited. Interrogation of prisoners of war through G2 channels, liaison with civil affairs or military government detachments, and questioning of civilian authorities are good sources of information as to the whereabouts of enemy stocks.

d. Usable matériel will be distributed through normal supply channels or moved to the rear, as directed by higher headquarters. Normally, only when a unit

is cut off from its own supply sources, as for example in airhead operations, is there justification for the use of enemy supplies such as food and clothing. Generally, such supplies are needed in rear areas for prisoners of war and for feeding the civilian population. If there is no adequate supply from enemy sources, then army supplies must be put to this use, regardless of the supply status in the theater of operations. In any case where captured matériel is exploited, permission must first be secured from the division special staff officer concerned. Of importance to the division quartermaster in this connection is the use of enemy fuels and lubricants. Oil and gasoline must be analyzed to determine whether it is suitable for consumption in United States vehicles and if not, modified as may be required.

e. An effective guard must be maintained over captured stocks to provide adequate protection against looting, pilferage, and souvenir hunting. As in the case of salvage, the division quartermaster should show by his interest and example that captured items from the moment of capture are just as much United States property as are any government-issued items of supply.

CHAPTER 4

CLASS I SUPPLY OPERATIONS

Section I. SUPPLY REQUIREMENTS

58. GENERAL CHARACTERISTICS OF CLASS I SUPPLIES

- a.* Class I supplies are items consumed at an approximately uniform daily rate irrespective of combat operations or terrain, and which do not have to be adapted to meet individual requirements. Rations are the principal class I items.
- b.* A ration is the allowance of food for one person for one day. Ration components and substitutes are determined by the Department of the Army and are procured and issued by the Quartermaster Corps.
- c.* Class I supply presents both an item and tonnage problem and requires more constant effort on the part of the quartermaster than any other class of supply. An item problem arises from the fact that the requirement for food is a daily one for all elements of the division irrespective of their location, and various types of rations must be provided to meet various situations. Further, the weight of the rations consumed daily is large. Consequently, distribution procedures must be based upon careful planning in such problems as the transportation, breakdown, and issue of supplies.

59. AMOUNT OF SUPPLIES REQUIRED FOR CURRENT CONSUMPTION

a. The amount of class I supplies required by the division will be determined by the supply section of the office of the division quartermaster. Daily, at a time recommended by the quartermaster and announced through administrative orders, ration requests from subordinate units will be submitted to the quartermaster's office. These unit requests are consolidated, and the division daily ration request tabulated on a form substantially as shown in figure 5.

b. In preparing the division consolidated ration request, requirements for the division class I reserve and any other factors which are not reflected in unit ration requests must be considered. The division quartermaster must ensure, through periodic liaison with the drawing units and through coordination with G1, that a reasonably close relationship is maintained between actual requirements and the number of rations requested. Factors affecting ration requirements are as follows:

- (1) In the combat zone, a set percentage of overissue will ordinarily be authorized by higher headquarters to take care of distribution factors, losses, transient personnel, rapid fluctuations in unit strengths, or other emergency messing problems.
- (2) Unit commanders may be authorized to augment the prescribed ration when troops are in active combat, or when performing strenuous labor for long periods.

RATION REQUEST FOR THEATERS OF OPERATIONS			
HEADQUARTERS 99 th INF. DIV.	LOCATION J 7 X 2	DATE 4 JAN. 1951	
CLASS I SUPPLY POINT 234		RATION REQUEST FOR	
	ISSUE DATE 5 JAN 1951	CONSUMPTION RATE 6 JAN. 1951	
TROOP STRENGTH			
ORGANIC UNITS	NAME DESIGNATION 99 th INF. DIV.	ARMED FORCES STRENGTH 18,720	AVERAGE AUTHORIZED STRENGTH 18,667
ATTACHED UNITS AND CASUALTIES	777 th Hq Tr. BN.	612	606
	444 th QM Sv. Co.	184	182
TOTAL TROOP STRENGTH			19,445
SPECIAL GROUP STRENGTH			
CIVILIANS			
PRISONERS OF WAR			
PRINCIPAL CARRIER			
ANIMAL STRENGTH			
HORSES AND MULES			
BUGS			
RATIONS DESIRED			
ITEM	NUMBER	TYPE	QUANTITY
B	13,000		
5 IN 1	1,500		
C	5,000		
REMARKS			
DATE AND SIGN STAMP 1000 4 JAN. 1951	METHOD OF TRANSMISSION OFFICER COURIER		
NAME AND GRADE John Jones CAPT QMC	SIGNATURE John Jones		

DA AGO FORM R-5664
1 Jun 1951

Figure 5. Daily ration request for theaters of operations (DA AGO Form R-5664).

- (3) Troops often consume four meals per day of the individual type rations instead of the usual three.
- (4) Supply economy should be practiced at all times; troops on the move must be closely

- supervised to prevent food waste and loss which otherwise may be expected to increase.
- (5) Replenishment supplies needed to maintain the division class I reserve at an authorized level are normally requested as part of current requirements.

60. TYPE OF SUPPLIES REQUIRED FOR CURRENT CONSUMPTION

a. The type of class I supplies required will vary with the tactical situation (app. II). Whenever possible, army supply points will provide the division with rations in the types desired. The type of rations received, however, must depend on distribution by army from available stocks.

b. The theater commander will develop and publish monthly menus for each category of personnel for which he has supply responsibility. Menus will include components for each meal, item nomenclature, unit of issue, allowance per 100 men, a recapitulation of allowances for 100 men per month, and a list of substitutes to be utilized in the theater. Copies of each day's menu will be made available to the division quartermaster. An example of the daily menu is given in table I.

c. The principal types of rations used for unit and individual subsistence are described in appendix II.

6th day

Table I. Sample Menu

BREAKFAST	DINNER	SUPPER
Prunes	Corned Beef Hash	Baked Luncheon Meat with Pineapple Sauce
Hot Cakes with Syrup	Catsup	Mashed Sweetpotatoes
Grilled Sausage Links	Peas	String Beans
Bread	Bread	Bread
Jam	Peanut Butter	Oleomargarine
Oleomargarine	Oleomargarine	Vanilla Pudding
Coffee	Peach Cobbler	Coffee

ISSUE CHART

Ingredients—100 men	Unit	Breakfast	Dinner	Supper	Total 1 day
Beans, snap, canned	No. 10 can			4	4
Beef, corned, canned	6-lb can		3		3
Bread	lb	16	16	16	48
Coffee, R and G	lb	4	4	4	12
Eggs, dried, whole, acidified	lb	1		1	2
Flour, wheat	lb	15	5		20
Jam, canned	No. 10 can	1			1
Juice, pineapple, canned	No. 3 cyl			1	1

ISSUE CHART

Table I. Sample Menu—Continued

Ingredients—100 men	Unit	Breakfast	Dinner	Supper	Total 1 day
Luncheon meat, canned	6-lb can			4	4
Milk, dry, whole	1b	1½		3½	5
Milk, evaporated, canned	No. 1 can	5	5	5	15
Oleomargarine, canned	1b	2	3	3	8
Peaches, canned	No. 10 can	4	4	4	4
Peanut butter, canned	No. 10 can	1	1	1	1
Peas, green, canned	No. 10 can	4	4	4	4
Pineapple, canned	No. 10 can	1	1	1	1
Potatoes, sweet, canned	No. 2½ can	25	25	25	25
Potatoes, white, dehydrated, diced	1b	6	6	6	6
Prunes, dried, canned	No. 10 can	3	3	3	3
Sausage, pork link, canned	24-oz can	14	14	14	14
Shortening, hydrogenated	1b	½	5	1	6½
Sugar, granulated	1b	13½	6	10	29½

6th day

61. AUTHORIZED RESERVE

a. Composition.

- (1) The division class I reserve is prescribed at an authorized level by army headquarters. Unless otherwise directed this authorization is permissive, not mandatory, and the actual reserve level for the division will be announced by the division commander, within the limits of army authorization. The division commander's decision is influenced by such factors as the probability and type of combat, the distance to army supply points, and the amount and kind of transportation available.
- (2) Normally, reserve rations will be carried by unit kitchens, or unit vehicles for the emergency needs of individuals, and a reserve supply held by the quartermaster unit. A mixed reserve that includes more than one type of ration is customary. The composition of the class I reserve will vary somewhat with the type of division. Since the quartermaster may be required to recommend the division reserve, suggested class I reserve stocks are further discussed in connection with infantry, airborne, and armored operations.

b. Utilization.

- (1) It is important for the quartermaster to bear in mind that reserve rations are carried to be used. The reserve is authorized to cover emergency requirements, but it should be regarded as a working stock as well as a

reserve. An unused reserve is subject to deterioration, and requires periodic inspection against theft and damage to insure that adequate supplies will be on hand when emergency needs arise. An intelligently utilized reserve, however, can absorb minor shortages in issue, help to cover variations in unit strength that occur during the ration interval, and provide temporary relief from the consumption of combat-type rations when the tactical situation permits (par. 195). The consumption and replenishment of reserves need not interfere with the normal supply status of the division.

- (2) To insure that the reserve is maintained in good condition, a system of ration turnover should be employed: A complete issue of the reserve may be made at regular intervals, and the reserve level replenished by new supplier; or the regular issue of some fixed percentage of the reserve may be made, so that a complete turnover is accomplished periodically.

62. SUPPLIES ISSUED THROUGH CLASS I CHANNELS

a. Soap, atabrine, salt tablets, toilet paper, insecticides, and similar articles may be issued through class I supply points. Procedures for requisitioning and issuing these supplies are prescribed by the authorizing headquarters.

b. Upon the recommendation of the division surgeon, salt and atabrine tablets may be issued with rations and made available to individuals at meal-

time. Water purification tablets are usually included in emergency and combat-type rations.

c. Gratuitous issue of the sundries pack (app. II), will also be made through class I channels in the combat zone, when facilities are not available for the sale of toilet articles and supplies, candy, and tobacco products. These items are distributed at army supply points on a daily or weekly basis as the army commander directs. Since combat troops have little space for carrying personal items, the quartermaster should keep his stock of such items at the division class I distributing point for issue to divisional units on a daily basis.

Section II. REQUISITIONING

63. FORM OF REQUISITION

a. The instrument of requisition of class I supplies in the combat zone is normally the daily ration request, which is submitted by consuming organizations to supply points for the issue of authorized rations. It should contain information as to the current strength of the groups of personnel to be supplied, the types and estimated quantities, within authorized allowances, of each type of ration that will be required on the date of issue, and the date the requested rations are to be consumed (fig. 5).

b. If the tactical situation should prevent normal preparation and transmission of the daily ration request, supplies may be requisitioned by any available means of communication. In such cases, the basic information required is the number of troops to be fed and what source will provide transportation for hauling the supplies (par. 67).

64. RATION INTERVAL

The ration interval is the time between the submission of the request and the consumption of the ration. The interval will be kept to a minimum to permit more accurate estimates of requirements and to decrease the number of overissues and underissues. As represented by the daily ration request, the ration interval includes the date of the request, the date of issue, and the date supplies will be consumed (fig. 5). Depending upon their length, two or more ration intervals will always overlap, thus ensuring a continuity of supply. The division daily ration request will normally be the basis for rations to be drawn from the army supply point 1 to 3 days later—

a. Since forward supply points normally have no fixed refrigeration facilities, perishable stocks require prompt attention and issue of such stocks will be made by army within 24 hours whenever possible. The ration interval for the distribution of nonperishable stocks is more flexible.

b. In the case of fast-moving forces, such as an armored division, the interval may be as much as 72 hours. The longer interval may be required to complete arrangements for the provision of supplies at an advanced point on the division's route of march.

65. NORMAL REQUISITIONING PROCEDURE

a. General. The estimated strength given on the daily ration request (fig. 5) shows the number of men for whom it is anticipated that rations will be

required on the consumption date. Estimated strengths are based on current experience data covering probable casualties and replacements anticipated during the ration interval. As a general rule, the number of rations requested will be issued without question. The morning report strength shown on the daily ration request helps to assure a reasonable correlation between actual strengths and previously submitted estimates. Any substantial overissue will be corrected in subsequent issues, as required.

b. Divisional Units.

- (1) Divisional units such as regiments and separate battalions are the first consolidating headquarters. Subordinate units submit their estimated strength for rations for the date the rations will be consumed to the regimental supply officer or, in the case of separate battalions, to the battalion supply officer. The type of rations requested will normally be prescribed by the regimental or separate battalion commander, based on the tactical situation. The consolidated requests are forwarded to the division quartermaster.
- (2) In the case of separate companies, the company supply officer prepares a daily ration request for his company which is submitted directly to the division quartermaster.

c. Division Quartermaster. The quartermaster further consolidates the requests of all divisional units into a division daily ration request. The request is sent to the appropriate supply point re-

sponsible for the subsistence supply of the division. In consolidating unit requests at the divisional level, unit requirements may be further modified as follows:

- (1) The supply section of the quartermaster's office, as authorized, will include in the total divisional estimate any additional requirements needed to maintain reserves or to meet anticipated emergency needs (par. 59b).
- (2) When subordinate units report an excess of certain rations on hand, an adjustment covering these items will be reflected in the division request. Similarly, previous overissues can be adjusted, as necessary, on subsequent issues.
- (3) The division request will also include estimates covering units and casualties which may not have submitted a ration request but which, as attachments to the division, are expected to require rations on the consumption date.

d. Army Supply Point. The army supply point, in turn, uses the division estimate as a planning basis for resupply. Normally, overissues in a fixed percentage are authorized the supply point to cover variations in strength between the date an estimate is submitted and the date the supplies are drawn. Also, supply points carry limited but fairly well-balanced stocks of all types of rations, to cover variations in the types of rations required.

e. *Emergency Needs.* Should emergency needs arise during the ration interval, the division quartermaster has the following alternatives:

- (1) When the number of extra rations required is small, they may be issued from the division reserve.
- (2) When the division reserve is not adequate to cover such needs, supplemental ration requests may be submitted to the supply point. Supply points will issue additional rations from stock the same day emergency requests are received.

Section III. DISTRIBUTION

66. DISTRIBUTION SYSTEMS

The distribution of subsistence supplies in the combat zone (fig. 6) is accomplished by one of the following alternative systems:

a. When army class I depots are established, their prescribed level of supply is maintained by shipments from communications zone issue depot in communications zone transportation. Army class I depots, in turn, ship supplies to army class I supply points in army transportation. Divisions draw from a designated army supply point and haul the bulk rations to distributing points where they are broken down and issued to using units. The field trains of the using units haul the rations to the field train bivouacs and, in turn, deliver them to the kitchens.

b. When a daily train can be used from the communications zone issue depot direct to the army supply point, issues may be made without the estab-

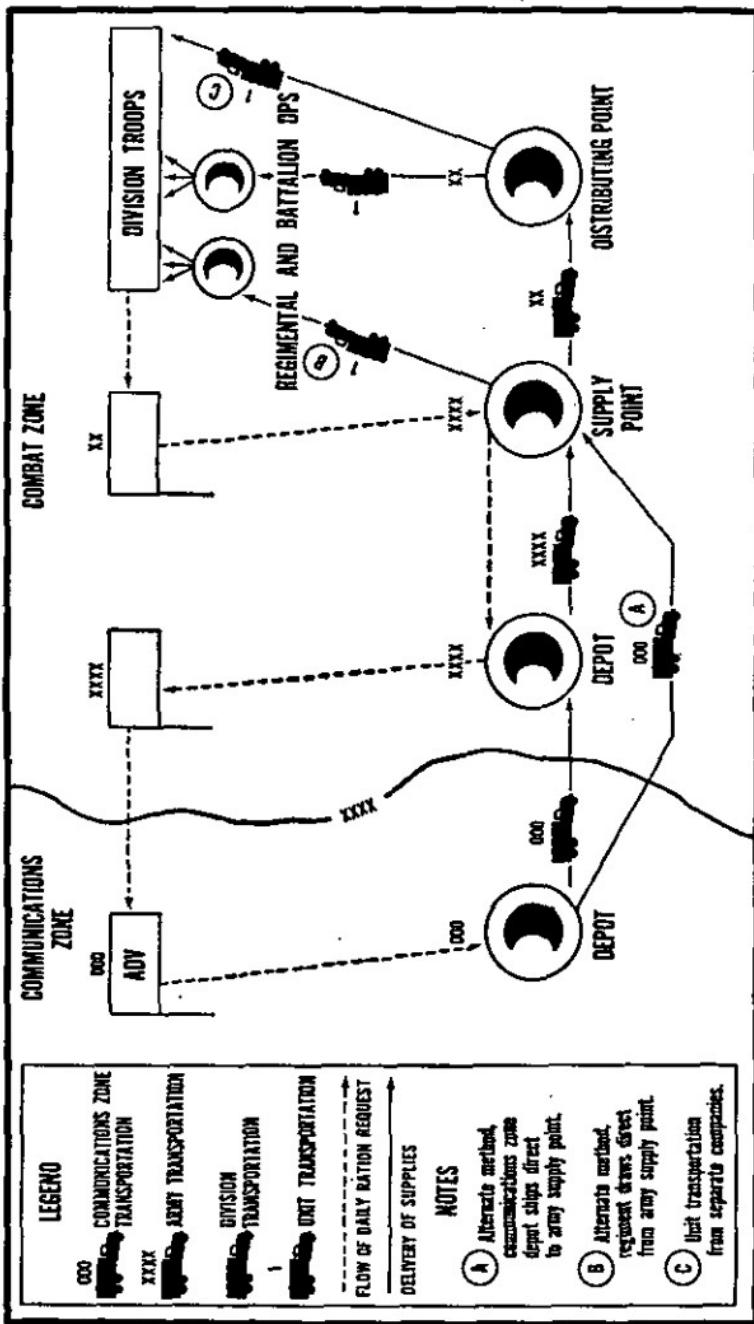


Figure 6. Distribution of subsistence supplies in the combat zone.

lishment of an army depot. Daily ration requests for the division are forwarded to the army quartermaster. The army quartermaster requests the communications zone issue depot, through the communications zone advance section to issue the supplies. Using communications zone transportation, advance section issue depots make deliveries daily, in accordance with army's requests, to the army supply points.

67. METHODS OF SUPPLY DISTRIBUTION

a. General.

- (1) There are two general methods of distributing supplies to using units distinguished by the point at which supplies are delivered to them, as follows:
 - (a) *Supply point distribution.* Delivery is made to using units at the supply point, and supplies are hauled to the unit bivouac or distributing point in transportation furnished by the using unit. This is the normal method of distribution.
 - (b) *Unit distribution.* Delivery is made to using units at their bivouac or distributing point.
- (2) A combination of these methods may be employed as the immediate situation requires.

b. Army to Division.

- (1) Normally, the divisional quartermaster unit operates a distributing point or points to which class I supplies are hauled by the division daily ration train after being drawn in bulk at the army supply point.

- (2) Under certain circumstances, subordinate units of the division, such as regiments, draw rations direct from the army supply point in accordance with arrangements made by the division quartermaster:
 - (a) When the division has not established a class I distributing point.
 - (b) When a divisional unit is bivouacked at some distance from the distributing point of the division but is near the army supply point.
- (3) When it is necessary for army to make unit distribution to the division, trucks from the army pool are usually employed, since supply points and subsistence supply companies have no transportation for this function.

c. Division to Divisional Units.

- (1) The general methods of distribution described above are equally applicable at the divisional level. Supply point distribution is the normal method, but in emergencies it is combined with unit distribution. Forward combat units are sometimes unable to return to the division distributing point to pick up rations by their own transportation means.
- (2) Regiments and separate battalions drawing from the division class I distributing point normally operate breakdown points for the supply of their organic units. Separate companies and attachments to the division that are not part of a battalion or regiment are supplied directly by the division dis-

tributing point. For reasons of transportation economy, a separate company may draw supplies for other separate companies bivouacked in the same area. However, the request of each separate company is submitted individually, and the division distributing point, in such cases, is responsible for the separate breakdown and issue of each company's rations.

68. REQUIREMENTS FOR THE CLASS I DISTRIBUTING POINT

a. General. Requirements for the class I distributing point include the choice of a site that will permit breakdown and distribution operations to be readily performed with adequate security, and such protection for supplies as the climate of the region demands. The general requirements for a distributing point discussed in paragraphs 47 through 52 are applicable.

b. Layout.

(1) The risk of an exposed position for the sake of convenience is not justified when there is danger of the loss of personnel, vehicles and supplies. When the nature of the terrain makes the choice of a semiexposed position inevitable, and when time is too limited for the extensive preparation of camouflage, the best alternative security measure is the careful dispersal of supplies. Normally, however, the terrain itself should offer some protection. A position flanked by natural obstacles to mechanized raids should receive careful consideration. If

the military situation and enemy capabilities indicate the possibility of highly mobile raids into the division rear area, the location of the distributing point should be established in relation to the location of other service installations of the division, so that a coordinated plan of defense may be used.

- (2) Wherever possible, the use of existing buildings, courtyards, or heavy woods should be adopted for breakdown operations. A shed, building, or courtyard, accessible to a road, is desirable for protecting rations from the elements as well as from enemy observation. If no other cover is available, the class I section is provided with a large wall tent, which can be used for the control point and as limited protection for such dry supplies as sugar or flour.
- (3) The area required for operations will depend upon the nature of the site. Hard standings and good drainage are important. As an aid to traffic control, the use of a horseshoe or semicircular ground area has proved satisfactory for the turnaround (figs. 12 and 13). The area should be designed to permit the assembly of drawing trucks and large enough so that trucks waiting to draw rations can be dispersed.
- (4) Normally, the distributing point will not be closer to the front than five miles. The location should, if possible, be out of light artillery range but not so far to the rear as to make the turnaround time for drawing

units excessive. Drawing units should be able to make the round trip during the hours of darkness; however, with air superiority, this consideration is of less importance and issue could be scheduled at any time.

- (5) Whenever possible, the distributing point should not be located in the immediate vicinity of artillery positions or heavy concentrations of troops.

c. Storage. There is no storage problem with class I supplies at the divisional level unless a larger reserve is made necessary by special operations that interrupt the normal channels of supply (par. 38), or under difficult conditions such as extreme heat or cold. In general, only perishable supplies must be given special consideration at all times. When fresh meat, fruits and vegetables are items of issue in the combat zone, the quartermaster has no means of preserving these commodities and must issue them at once. Fruits and vegetables will normally last a day or so, if necessary, from the time they are received. Meat, however, is usually shipped in refrigerator cars or trucks to class I supply points; from the time it is drawn by the division, it should be delivered to the using kitchens within 24 hours. Freezing weather may extend this time element, but chances cannot be taken on the thawing of frozen meats.

69. OPERATION OF THE CLASS I DISTRIBUTING POINT

a. The class I distributing point is operated by personnel of the class I section of the divisional

quartermaster unit, under the direction and supervision of the quartermaster and his class I officer.

b. The operation of the distributing point is concerned mainly with the physical distribution of subsistence supplies (pars. 70 and 78 through 85). However, the class I section also performs certain administrative functions in the handling of supplies (pars. 74-76). These operations will include the drawing and transportation of bulk supplies from the army supply point, checking incoming supplies, making final adjustments and corrections in the computed ration breakdown, determining the best method of issue, and distributing rations to drawing units.

70. DIVISION RATION TRAIN

a. Normal Transportation Range. The distance the division ration train must travel will vary between approximately 5 to 35 miles. Army class I supply points are usually located in the corps area of the combat zone in advance of army depots and within the transportation facilities of the division. Normally, supply points will be so located that division trucks will not have to make a round trip of more than 70 miles.

b. Drawing Schedule. When a class I supply point is established, the army quartermaster prepares the appropriate paragraphs to be included in administrative orders, giving the new location, the time of opening, the units which are to draw from the supply point, and the time the supply point at the old location closes. The time at which the division will draw its rations will be announced by the appropriate supply point officer. Divisions are

generally permitted to draw their supplies first, since they usually have the longest distance to travel, and supplies which are drawn in bulk must subsequently be broken down for issue at the division class I distributing point. Although rigid schedules may not be adhered to by supply point officers in a combat zone, it is to the division quartermaster's interest to arrange for the division ration train to pick up supplies at an appointed time.

c. Transportation Requirements.

- (1) The number of trucks required to pick up class I supplies for the division will be governed by the following considerations:
 - (a) Quantity and type of supply items due the division, as indicated by daily ration requests.
 - (b) Load characteristics (weight and cube) applicable to the supplies due.
 - (c) Type of transportation available.
 - (d) Road conditions and the length of the haul.
- (2) The only accurate basis for estimating transportation requirements is experience of the current situation. Quantities and types of supplies will vary with the strength of the division and its current needs. Packaging characteristics are subject to change, as improved methods are developed by research. Also, road conditions and the distance the division ration train must travel will determine safe load limits for available transportation.

d. Loading. So far as possible, bulk supplies drawn at the supply point should be loaded by item. The minor danger that the total quantity of some staple component might be delayed or destroyed in transit is offset by greater convenience in the checking and breakdown of rations at the division distributing point.

e. Security and Traffic Regulations. The division ration train must operate in conformity with all regulations governing convoy security and traffic control.

Section IV. SUPPLY ADMINISTRATION

71. SUPPLY SECTION, ODQM

The administration of class I supply is primarily a function of the supply section of the quartermaster's office, in coordination with the activities of the class I section of the supply platoon. In addition to determining division requirements and preparing the division daily ration request, the supply section, ODQM, also performs the following administrative duties in the distribution of class I supplies:

- a.* Computes each requesting unit's allotment from bulk supplies, as a guide to issue at the class I distributing point.
- b.* Prepares the forms necessary for the breakdown and issue of supplies.
- c.* Maintains appropriate class I supply records.
- d.* Prepares the issue schedule for drawing units.

72. COMPUTING THE RATION BREAKDOWN

a. Information Required. To find the quantity of each item to be issued to a divisional unit (fig. 7), the following information is required:

- (1) Designation of the unit drawing rations, as stated on the unit ration request.
- (2) Consumption date for which the rations will be drawn, as stated on the unit ration request. The consumption date will normally be the day following the date on which the breakdown is computed and the supplies are issued. The appropriate unit ration request will always be the one which applies to the consumption date for which the breakdown is being computed.
- (3) The types of rations requested for use on the consumption date, as stated on the unit ration request.
- (4) For "A" and "B" rations, the unit allowance of each ration component per 100 men, as stated on the daily menu applicable to the consumption date. In the case of combat-type rations that may have been requested, all component quantities are predetermined and will not be stated on the menu.

b. Computing Procedure. The unit's strength is multiplied by the allowance of each item per 100 men and divided by 100. Allowances are computed to the nearest whole. Thus, if there were 660 men in a battalion, and 12 pounds of coffee were the allowance per 100 men, 73 pounds of coffee would be the quantity allotted that organization.

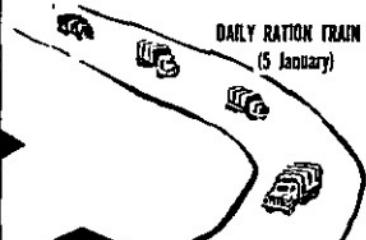
DAILY RATION REQUESTS

(see fig. 5 for complete form)

	DIVISION 4 January	
ISSUE DATE:	5 January	
CONSUMP. DATE:	6 January	
AVERAGE ESTIMATED STRENGTH		
Total:	19,455	
RATIONS DESIRED	Type	Number
	B	13,000
	5-in-1	1,500
	C-4	5,000

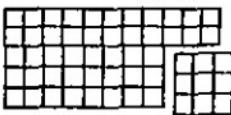
DELIVERY OF SUPPLIES

(see fig. 6 for complete diagram)



ARMY
SUPPLY
POINT

ISSUE
(5 January)



XX
DP

CONSUMPTION
(6 January)

XX

73. PREPARATION OF FORMS

a. General. As unit allotments are computed, they are tabulated on appropriate breakdown and issue forms. These forms serve three purposes: they assist the computor in checking unit and itemized totals against the bulk total for the division; they are a guide to personnel at the class I distributing point for the equitable distribution of supplies received; and they are retained as supply records of completed transactions. The types of forms prepared for use in divisional distribution include the master breakdown sheet, unit issue slips, and item tally slips.

b. Master Ration Breakdown Sheet. The master ration breakdown sheet (fig. 8) tabulates unit allotments for all ration components authorized by the appropriate daily menu. The master breakdown sheet should also include a breakdown of any combat-type rations included in the current day's issue. Space must be provided for entering the actual supplies received from the army supply point, so that any shortages or overages in issue and any substitutions of components may be readily detected and adjusted (par. 74).

c. Unit Ration Breakdown Sheets. When the master breakdown sheet has been filled out, separate unit issue slips (fig. 9) are prepared. Issue slips tabulate the ration issue by items and quantity, as due each drawing unit. This information is obtained from the master breakdown sheet (fig. 8). The issue slip for each unit should be prepared in duplicate: one copy is used by the class I section

in making issue; the other copy is provided the drawing unit for its own information.

d. Ration Breakdown Work Sheet.

(1) Ration breakdown work sheets (fig. 10) tabulate by drawing unit and quantity the issue of a single component of the ration. This information is obtained from the master breakdown sheet (fig. 8). Although they may be compiled from the master breakdown sheet, tally slips should be totaled separately, checking itemized unit totals against itemized allowances for the division as a whole. This will provide an added safeguard against possible error in the original computation.

MASTER RATION BREAKDOWN SHEET				Supply Point		Date of Issue 10 JAN 51		Date of Consumption 11 JAN 51												
SUBSTINCE	INIT	ALLOW PER 100	ITEM REGT	1/2 REGT	2 REGT	3/4 REGT	REGT	1/2 REGT	2 REGT	3/4 REGT	REGT	1/2 REGT	2 REGT	3/4 REGT	REGT	1/2 REGT	2 REGT	3/4 REGT	REGT	TOTAL
<i>Ration</i>																				
A or B		3000	3701	2021	—	—	3000	1248	339	900	206	14463								
S IN I		774	—	770	677	591	225	—	—	—	302	3337								
C		—	—	1080	—	—	501	—	70	102	1673									
<i>Item</i>																				
BEANS, SNAP	#10 CAN	4	120	148	80	—	120	52	13	36	8	577								
BEEF, CORNED	6 LB CAN	3	90	111	60	—	90	39	10	27	6	433								
BREAD	LB	48	1440	1776	960	—	1440	624	163	432	96	6931								
COFFEE, R & G	LB	12	360	444	260	—	360	156	41	108	24	1733								
Eggs, Dried	LB	2	60	74	60	—	60	26	7	18	4	289								
Flour, Wheat	LB	20	600	740	400	—	600	260	68	180	40	2835								
JAM	#10 CAN	1	30	37	20	—	30	13	3	9	2	166								
JUICE, PINEAPPLE	#3 C. L.	1	30	37	20	—	30	13	3	9	2	164								
LUNCHEON MEAT	6 LB CAN	4	120	148	80	—	120	52	13	36	8	577								
Milk, Dav., Whole	LB	5	150	185	100	—	150	65	17	45	10	722								
Milk, Evaporated	#1 CAN	15	450	555	300	—	450	195	51	135	30	2166								

DA AGO Form R-5657
1 Apr 51

Figure 8. Master ration breakdown sheet (DA AGO Form R-5657).

(2) Tally slips supplement, but do not replace, the use of issue slips for performing breakdown and issue to individual units. They involve extra paper work, but, when time permits their preparation, they also offer the following advantages:

- (a) When the unit pile method of issue will be used at the class I distributing point, item tally slips permit the breakdown of incoming supplies directly from the trucks on which they are loaded (par. 80).
- (b) In the breakdown of certain bulk-packaged supplies, tally slips covering such items can be retained at the distributing

UNIT RATION BREAKDOWN SHEET				Date 15 JAN 51		
Supply Point	Organization	STOCKS				
99TH INF DIV.	3RD INF REGT.	Apr. 2 Month Other (Specify)	2001 770 Other (Specify) C 1800			
		QUANTITY ISSUED				
		Total Units	Packages	Broken Packages		
LUNCHEON MEAT (6 LB)	CAN	4	6/CASE	80	13 CASES	2 CANS
VIENNA SAUSAGES (24 OZ)	CAN	15	24/CASE	300	12 CASES	12 CANS
BEEF, R-E-C	POUNDS	40	AS MARKED	800		
MILK, EVAP (No. 1)	CAN	15	48/CASE	300	6 CASES	12 CANS
MILK, WHOLE, DRY	POUNDS	5	25 LB/CAN	100	4 CANS	
BUTTER	POUNDS	7½	32/CASE	150	4 CASES	12 POUNDS
JAM (No. 10)	CAN	1	6/CASE	20	3 CASES	2 CANS
SUGAR (100-LB BAG)	POUNDS	29½	100-LB BAG	590	6 BAGS	
BREAD (2-LB LOAF)	POUNDS	48	50 LOAVES/BOX	960	9 BOXES	30 LOAVES
CEREAL, WHEAT (2-LB BOX)	POUNDS	6	20 BOXES/CASE	120	2 CASES	12 BOXES
RATION, 5-IN-1	RATION	100	5/CASE	770	154 CASES	
RATION, C	RATION	100	6/CASE	1000	167 CASES	
Name and Grade	JOHN JONES			Signature	John Jones Capt. OMC	
CPT. OMC						
DA AGO Form 1 Apr 51 R-5658						

Figure 9. Unit ration breakdown sheet (DA AGO Form R-5658). .

RATION BREAKDOWN WORK SHEET

Item No.	Issue Date	
1	11 JAN 51	
Item		Unit
BEANS SNAP		#10 CAN
Cases Required	Units in Case	
96	6	
Total Units from Stock	Loose Units	
96	0	
ORGANIZATION	ALLOWANCE	ISSUE
1ST INF	20	20
2ND INF	24/4	24/4
3RD INF	13	13
DIV ARTY	20	20
DIV HQ	9	9
MED BN	2	2
ENG BN	6	6
777 HV TK BN	1/2	1/2
TOTAL	96	96
Balance on Hand	NONE	
Issued By	<i>Jack Bills Cpl. QM</i>	

DA AGO Form R-5676
1 Sep 1951

Figure 10. Ration breakdown work sheet (DA AGO Form R-5676).

- point after issue is complete as a checklist of shortages and overages (par. 75).
- (c) Wherever used, they provide an added check against errors in distribution.
- (3) Only one copy of the tally slip is required for an item. If the slips are prepared as blank forms, listing divisional units according to the issue schedule (par. 77c), they can be used for any item of issue simply by listing the name of the item at the top of the slip and filling in the unit allotments.

74. ADJUSTMENTS TO BREAKDOWN ALLOTMENTS

a. When the division ration train is loaded at the army supply point, supplies are checked for type, quantity, and condition. If substitutions have been made in the menu, the changes will be indicated on the ration breakdown sheet that is made out for division supplies by the supply point officer. This ration sheet is used to check all supplies drawn in bulk. One copy is provided the division. The other copy is retained by the supply point and is signed as a receipt by the officer in charge of the division ration train.

b. All forms prepared by the division quartermaster's office should be on hand at the class I distributing point by the time the ration train returns from the supply point. The necessary forms will normally include the master breakdown sheet, unit issue slips in duplicate, and (when required) item tally slips. In performing the breakdown, however, the distributing point must be guided by the statement of supplies actually received. Menus and al-

lowances published by theater headquarters are subject to changes and substitutions between ports in the communications zone and army forward supply points. Consequently, the supplies listed on the ration sheet provided by the army supply point will be the only accurate basis for issue.

c. Any necessary corrections to the forms prepared by the quartermaster's office will be made at the distributing point. The division quartermaster is responsible for advising all divisional units of changes and substitutions in the printed menu.

75. SHORTAGES AND OVERAGES

a. Even when there is no shortage in supplies received, it is often difficult under combat conditions to avoid the overissue and underissue of certain items. This problem in the administration of class I supply normally arises when bulk supplies are packaged in quantities larger than the unit of issue. Cased fresh meat and certain dry supplies are examples which recur frequently. Powdered whole milk, for example, may be packed in 25-lb cans. Coffee is often packaged in 25-lb bags. When a fractional part of the packaged quantity is required to complete a unit allotment, either the packaged quantity must be broken or some record kept of shortages and overages in issue. Neither alternative offers a solution that can always be applied. In deciding which method best suits the conditions in which the division may be placed, the quartermaster must bear in mind the advantages and disadvantages presented by each.

b. Whenever possible, shortages and overages in issue should be avoided. Although the opening, weighing, and repackaging of bulk quantities requires added time and labor in the breakdown, this method is preferable to the maintenance of records for even the limited number of problem items normally encountered. The class I section is provided with the necessary facilities for apportioning bulk supplies (par. 78). Such equipment would not be organically provided if, under most circumstances, it was not expected that it could be used. There are occasions, however, when its use is limited. Heavy rain, or wind and dust storms, for example, might well dictate the smallest possible degree of exposure for dry supplies. Under combat conditions, other restrictions may be imposed by factors of time, available personnel, after-dark operations, sanitary problems, or other limitations arising from the local situation.

c. When conditions prevent a complete apportionment of all items in the quantities to which drawing units are daily entitled, a checklist of overissues and underissues may be established. Such records will permit equitable distribution between units over a period of time. The Standard B Ration Menu and Requisition Guide (SB 10-495), for example, which is applicable in most areas of the world, provides a 15-day cycle of daily menus based on components of the "B" ration. An equitable average distribution can be insured in such cases from the recurrence of standard items. There are, however, a number of disadvantages when the method of overissue and underissue is employed:

- (1) Since underissues are intended to compensate for overissues, the method can be fairly inaugurated only when there is a surplus of the items in question.
- (2) Although records require only a simple form of bookkeeping and may be limited to a few problem items, the clerical work must be accurate and regularly maintained. There will be no problem with units receiving overissues, but subsequent underissues can normally be expected to raise a certain number of conflicts and complaints.
- (3) The quartermaster must especially bear in mind the fact that when this method is used by the division class I distributing point, it automatically forces subordinate units to employ the same system in regimental and battalion distribution. Combat units must always be relieved of such administrative problems whenever possible.
- (4) The method should seldom be applied in distribution to attached units. If they are transferred, no equalization may be possible.

76. RECORDS

a. Except as noted below, all records for the administration of class I supply are kept by the supply section of the office of the division quartermaster. They should include the following:

- (1) Copies of the master ration breakdown sheet, provided by the army supply point which are daily receipts to the supply point

for division supplies drawn in bulk (debit vouchers).

- (2) Receipted copies of unit ration breakdown sheets for supplies drawn from the class I distributing point by the various divisional units (credit vouchers).
- (3) A record of the number of rations (by types) on hand in the division reserve, with a breakdown list of the reserve rations issued to be carried by divisional units. When "B" rations are included in the reserve, ration components should be listed by item.
- (4) A checklist of shortages and overages in the issue to divisional units. Such records, when required, will be maintained at the distributing point. It is also advisable for the distributing point to keep records on the type of cuts provided, when the issue of carcass meat is available.

b. In addition to these records, it is necessary to retain, at least until issue is complete, copies of unit ration requests and of consolidated division ration requests. These are needed to compute the daily breakdown of bulk supplies and to prepare the forms necessary for distribution operations. They can also provide valuable planning data for class I logistics, especially when reflecting a variety of tactical situations. Copies of the standard menu and the issue schedule for divisional units are also needed as current information.

77. SCHEDULING BREAKDOWN AND ISSUE

a. Time Factors. The time schedule for breakdown and issue depends on the following factors:

- (1) Time of arrival of the division ration train at the distributing point with incoming supplies.
- (2) Time required to unload the supplies and to make any necessary corrections to breakdown and issue forms.
- (3) Time required for the issue of supplies.
- (4) Time of the end of evening twilight, if supplies must be issued during hours of darkness.

b. Ration Cycle. A ration cycle is the 24-hour period during which the ration is consumed. Normally, rations are issued to divisional units for use the following day. The ration cycle usually begins with supper but might begin with any meal, depending upon the army supply point schedule for drawing supplies in bulk, the length of the haul, the time available after the return of the ration train in which to perform the required breakdown and issue operations, and the prescribed reserves carried on unit trains. If issue must be made during hours of darkness, for example, it would be difficult or impossible for units to draw their rations from the distributing point, return to their train bivouac, make further distribution to organic units as may be required, and still allow time for unit kitchens to prepare any part of that issue for the morning meal. Again, if a reserve of two-thirds of a day's ration is prescribed for units, and distribution to units is between dinner and supper, the cycle would be dinner, supper, break-

fast, in order to maintain the reserve. It is the responsibility of the quartermaster to select the cycle which best answers the needs of the division.

c. Issue Schedule.

- (1) The supply section of the quartermaster's office should prepare a recommended issue schedule based on the considerations outlined above. Units that normally draw supplies from the division distributing point are listed for each type of division in appendix II.
- (2) So far as possible, the schedule should also take into account the following factors:
 - (a) The distance a drawing unit must travel from its field train bivouac area to pick up supplies. Priority should be given to units which come the farthest distance. However, units in the immediate vicinity of the distributing point may be permitted to draw first if they are able to clear the distributing point before trucks from forward units arrive.
 - (b) Service company personnel of large organizations such as regiments must further distribute rations to regimental units after returning to regimental distributing points. For this reason, the larger organizations should also receive special consideration in deciding the drawing sequence.
- (3) When the issue schedule is complete, it will be approved or modified as necessary by the division G4. It is then disseminated to

drawing units in an administrative order or by message. If last-minute changes to the schedule should arise, units may be notified by messenger, telephone, or over the administrative radio net when to pick up their rations.

Section V. APPORTIONING BULK SUPPLIES

78. FACILITIES

- a. The class I section is organically provided with a commissary chest, which includes adequate equipment for apportioning bulk supplies whether obtained through normal supply channels or through a system of local procurement.
- b. Expendable supplies, such as butcher's paper for wrapping cuts of meat and paper bags for repackaging broken lots of dry supplies, may be requisitioned through normal supply channels.

79. APPORTIONMENT UNDER COMBAT CONDITIONS

- a. *General.* Whenever possible, bulk supplies should be apportioned so that each unit's allotment is complete. This will necessitate the preliminary unloading of certain problem items and their removal to a point of cover or other protected location, so that the weighing and dividing into unit lots can be accomplished with due regard for factors of sanitation, convenience in operation, and the protection of supplies. Regardless of the method of issue to be used (pars. 80-82), whenever specific and not approximate allowances are to be issued, this step must be completed before the final breakdown into unit or item

piles can proceed. However, to save time and to reduce the amount of handling, the smallest possible quantity of each problem item should be unloaded. In the apportioning of coffee received in 25-lb bags, for example, only a few bags should normally need to be broken and divided to complete the unit lots. Larger units such as regiments, due allowances of more than 25 pounds, should receive the bulk of their coffee ration in the original package. This will permit the greater part of the breakdown to be made directly from the incoming trucks, and saves time and labor required when supplies must be hand-carried.

b. Canned Goods. Canned goods offer little problem, since the can, regardless of size, will normally be the unit of issue. Where exceptions occur, as in the instance of powdered milk, the item should be handled in breakdown as dry supplies. Cases of canned goods will be opened as necessary and distributed to the nearest whole unit (can). With the exception of scarce items which might be regarded as delicacies, no record of partial allowances need be kept. Care should be taken, however, that smaller divisional units are not continually slighted in the breakdown. Shortages, if any, should be absorbed in the issues to larger units.

c. Dry Supplies. Broken and repackaged lots of dry supplies should be marked with the weight of the contents, name of the item, and the name of the unit for whom each lot is intended. When conditions prevent the apportionment of packaged quantities, approximate allowances must be issued and a record kept of overissues and underissues.

Ration breakdown work sheets can be used for this purpose, or a separate record book or file kept on the more common staples.

d. Cased Fresh Meat. Refrigerated fresh meat is normally boned for oversea shipment and packed in cases averaging 40 to 50 pounds each. The weight of the contents of each case will be as marked. Individual cuts of meat are wrapped separately. Depending on the kind of cut or its intended use, individual packages will average from 4 to 9 pounds. Cased meat is handled similarly to canned goods: cases will be opened when necessary, and individual cuts will be distributed according to their weight.

e. Carcass Meat.

(1) Ration components such as fresh meat, vegetables, and dairy products are sometimes made available through sources of local procurement. In most theaters of operation, however, food obtained locally must be selected and prepared with particular regard for factors affecting health. This is especially true of fresh meat, which requires careful inspection and handling. For this reason, fresh meat locally procured and processed in quantity is normally provided through regular supply channels. The theater procurement board is responsible for supervising the procurement of animals. These are processed by abattoir units stationed at or near cold storage plants in order to preserve the meat after slaughtering. Slaughtered animals are cut into carcasses, sides, quarters, or wholesale cuts at

the abattoir. The meat is moved, as required, from the cold storage plants to supply points for issue.

- (2) Carcass meat and other cuts drawn by the division as bulk issue will be further apportioned for issue to divisional units. This work is performed by the meat cutter of the class I section. For the equitable distribution of carcass meat, some record should be kept of the cuts issued, so that issue of the choicer cuts can be equalized between units over a period of time.

Section VI. BREAKDOWN AND ISSUE

80. UNIT PILE METHOD

Under the unit pile method, rations are divided into as many piles as there are units drawing supplies (fig. 11). The procedure is as follows:

a. Breakdown.

- (1) In the breakdown area, unit signs are placed at intervals along the turnaround. The control tent is provided with the master ration breakdown sheet and unit ration breakdown sheets. If the breakdown is to be accomplished directly from the incoming trucks, ration breakdown work sheets will also be required. When the division ration train arrives at the distributing point, the driver of each truck hands in to the control tent a truck slip covering the contents of his load. The control tent also receives the division ration sheet provided by the sup-

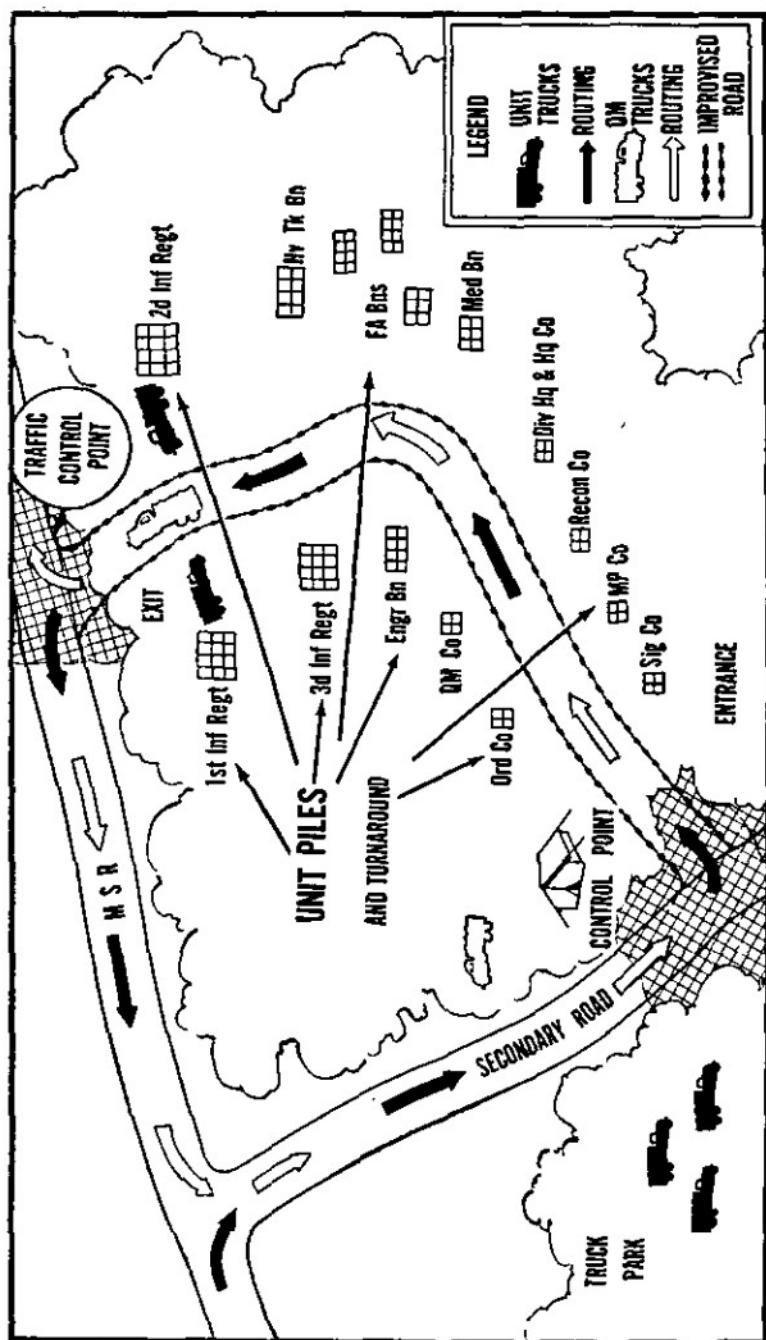


Figure 11. Division class I distributing point, showing unit breakdown.

ply point. The master breakdown sheet is checked against the statement of supplies received, and unit allowances are corrected on the breakdown and issue forms wherever necessary.

- (2) A checker is then assigned to each truck and provided with ration breakdown work sheets for the items carried by the truck, as indicated on its load slip. Two men are also assigned to each truck to assist in unloading. Trucks stop at each unit sign, and the checker together with the two laborers unload the allowance of items due the unit. When all trucks have made the round, each unit pile should be complete.

b. Issue. According to schedule, drawing units will pass the control tent to pick up their unit ration breakdown sheets. One copy is provided for the information of the unit. The other copy is retained by the quartermaster checker who accompanies the unit to its ration pile. Breakdown operations will be complete before distribution begins, so that there will be no conflict between the two streams of traffic. Unit piles should be so located that the unit trucks whose supplies are piled at the farthest points around the turnaround (fig. 11, the regimental piles) enter the distributing point first. Trucks which are to load at adjacent piles should enter next, and so on. In this way, several units can load simultaneously, and trucks will not have to pass each other on the turnaround. Personnel of the drawing units check and load the rations. The checker's copy of the unit ration breakdown

sheet is signed as a receipt by the representative of the unit. Any complaints are registered at the control tent.

81. ITEM PILE METHOD

Under the item pile method, rations are divided into as many piles as there are items of issue (fig. 12). The procedure is as follows:

a. Breakdown. No unit signs are required. The control tent is provided with the master breakdown sheet and unit ration breakdown sheets. Incoming supplies are checked against the division ration sheet and corrections made to the master breakdown sheet and unit ration breakdown sheets where necessary. No slips are required, however, for the actual breakdown. Three men are assigned to each truck: one to unload from the truck and two to carry and stack supplies at the item piles. As the trucks are unloaded, supplies are sorted by item. There will be a separate pile for every item, although minor items of issue may be grouped together in several small piles at one point. When issue is made, this will reduce the number of stops unit trucks must make in picking up supplies.

b. Issue. As each drawing unit enters the distributing point, it is assigned a checker who will accompany the unit trucks on their passage through the turnaround. Issue procedure is the same as for unit piles, except that trucks must stop at each item pile to receive the unit allowance. The quartermaster checker retains the duplicate copy of the unit ration breakdown sheet as a receipt.

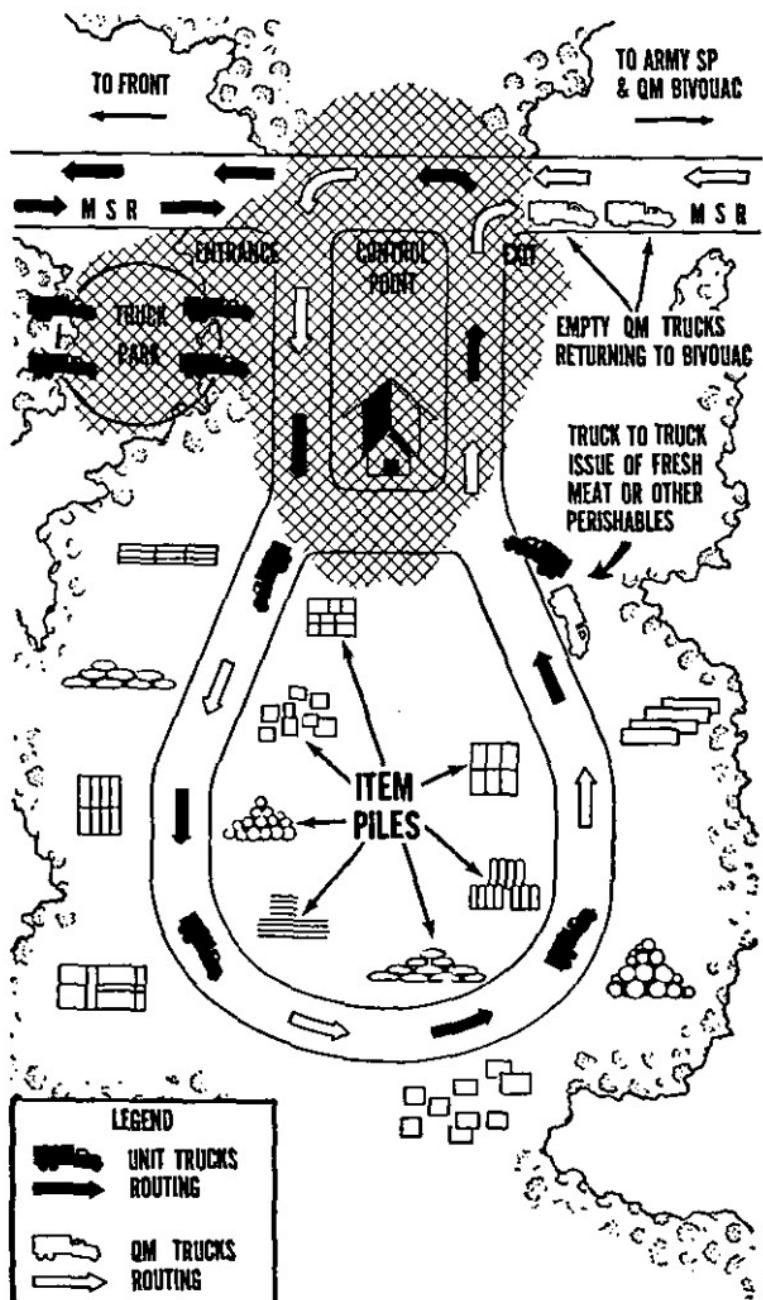


Figure 12. Division class I distributing point, showing item breakdown.

82. TRUCK-TO-TRUCK METHOD

Under the truck-to-truck method, rations are issued directly from division trucks to unit trucks. The procedure is as follows:

a. Breakdown. There is no separate breakdown. Breakdown and issue are combined in one operation. In the loading of division trucks at the army supply point, like items must be loaded together. Truck issue then becomes a modified form of item piles, the only difference being that the items remain on the trucks.

b. Issue. Incoming supplies will be checked as previously described. No issues will be made until all supplies are received. Division trucks are then dispersed along the turnaround, positioned on an angle facing *away* from the flow of traffic. The control tent assigns a checker to each drawing unit, as in the case of item pile distribution. Unit trucks back up to division trucks, and rations are issued directly from truck to truck.

83. DETERMINING THE BEST METHOD OF BREAKDOWN AND ISSUE

Each method of breakdown and issue described in paragraphs 80-82 has certain advantages and disadvantages. The class I officer should select the one that most nearly meets the requirements of the division, within the limits of the current situation. The advantages and disadvantages of the various methods are as follows:

a. Accuracy. The unit pile is the most accurate method of issue, because unit allowances are checked

in the breakdown and any error in count can be corrected before issue begins. Under the item pile and truck methods, allowances are checked while issue is being made. Consequently, any error in issues to earlier-scheduled units will be reflected in issues to later units. Truck issue may prove somewhat less accurate than item piles, because it is the more rapid method of the two. No method should involve major inaccuracies, however, since in all cases supplies will be checked when loaded at the supply point and breakdown and issue forms adjusted at the distributing point before issue is begun.

b. Speed. Truck issue is the most rapid method over-all, because it involves a single operation. Item pile takes relatively little time for breakdown but requires more time for issue. Unit pile is the slowest method over-all, because of the extra handling required for breakdown; it is, however, the most rapid of the three from the standpoint of issue alone.

c. Economy of Labor and Convenience.

- (1) For the distributing point, truck issue is the most convenient method, because no labor is needed for preliminary breakdown. During inclement weather there is the important advantage of being able to keep all supplies under cover. The mobility of supplies is also an aid to security. Truck issue, however, will not permit the release of issuing trucks until all supplies have been drawn. Since transportation facilities are limited, this disadvantage often outweighs the many advantages of this method. Truck issue should be used for frozen meats or

other sensitive items that must be handled or exposed as little as possible; thus, limited truck issue can be combined with unit or item pile distribution (fig. 12).

- (2) Using units find the unit pile method most convenient, because the entire issue can be loaded from one point. Both unit and item piles require dunnage and the use of tarpaulins in bad weather. Of the two methods, the item pile method permits the earlier release of quartermaster trucks and drivers, because less time for breakdown is required. This is an important consideration when the quartermaster ration train has made a long haul from the army supply point. Also, the item pile method normally requires the use of fewer men, since more rapid breakdown will permit a faster rotation of labor and the reassignment of personnel.

84. NIGHT OPERATIONS

a. *Blackout.* When breakdown and issue is made at night, it is necessary that light security be observed. A small amount of light is required for efficient operation inside the control tent, in the rear of trucks when loading and unloading, and at the breakdown piles for checking quantities issued. In the control tent, a lantern may be used; and light-proof hangings used to shield the entrance when necessary. All flashlights should be equipped with shields or filters. Personnel equipped with flashlights must be impressed with the need to use them

sparingly and to keep them pointed downward. Trucks must use blackout lights only.

b. Layout and Traffic Control Methods. Night operations require additional care in the layout of ration piles and in the control of traffic through the distributing point. Traffic control systems are somewhat different for the three methods of issue. The following rules are generally applicable at all times but are especially helpful for operations after dark:

- (1) Regardless of the method of issue, it is important that trucks should follow a predetermined route through the distributing point, with a minimum of backing or turning around. Ration piles must be stacked well clear of traffic lanes, so that trucks will not drive over supplies in the dark.
- (2) Unit piles should be dispersed sufficiently so that several units can load simultaneously without traffic congestion. To accomplish this, the piles should be off the main turnaround and should be clearly marked with signs placed at the edge of the road where they can be seen in the dark with the aid of a dim flashlight.
- (3) With item piles, however, the aim of traffic control is to keep trucks moving from pile to pile with the least possible delay. Consequently, the piles should be located close to the main turnaround so that loading trucks will not have to swing out of the line of traffic. They should be spaced far enough apart to avoid "accordion" congestion in the traffic movement.

- (4) For truck-to-truck issue, issuing trucks should be placed obliquely to the road, facing away from the direction of the flow of traffic. In this way, loading trucks can swing into a back-to-back position with a minimum of maneuvering and can pull away in the proper direction without turning around.
- (5) Traffic guides should be available at the entrance, exit, and intersections of the distributing point. All guides and checkers should be thoroughly familiar with the routes and location of supply piles. If unit trucks should arrive ahead of schedule, or for any other reason must wait to collect their supplies, they should be directed to a preselected parking area.

85. SUPPLY ECONOMY AND RELATED PROBLEMS

a. Supply economy must be enforced among ration breakdown personnel. At no time should they be permitted to take food for their own use from ration piles or trucks. Since class I supplies are issued daily and are, by their nature, expendable, laxness in the handling of supplies will be a temptation to unauthorized use or disposal.

b. Although normally the problem of a replacement company, sometimes the class I distributing point is used to return personnel to their units. Mostly, these are men who have been in the hospital and are now being sent forward. To safeguard supplies, the men should not be left to meet their units at the ration piles but should wait at the control tent

for the arrival of transportation. Names of returning personnel should be listed on the back of the unit ration breakdown sheets for their respective units, to expedite their return.

c. When it is necessary for ration breakdown personnel to work late at night, provision should be made, particularly in cold weather, for supplying hot coffee and sandwiches either on the job or after the job has been completed.

CHAPTER 5.

CLASS II AND IV SUPPLY OPERATIONS

Section I. SUPPLY CHARACTERISTICS AND CONTROLS

86. GENERAL CHARACTERISTICS OF CLASS II AND IV SUPPLIES

a. Class II supplies are unit or individual items for which specific allowances are established. Tables of organization and equipment, tables of allowances, equipment modification lists, and other lists or letters prescribe these allowances. Class II supplies are procured and issued by all services; quartermaster responsibility is limited to the procurement and issue of quartermaster items.

b. Class IV supplies include all items for which allowances are not fixed (except Air Force supplies) and all items in excess of those authorized in other classes of supply. Class I, II, III, and V items may be subject to class IV issue. Items equivalent to army exchange supplies, when handled by the division because the services of a quartermaster sales company are not available, are normally class IV. Other typical quartermaster class IV items might be special cold weather clothing, or an additional supply of 5-gallon gasoline cans for use in a special operation.

c. Within the division there is no difference between quartermaster class II and class IV supply operations, except for the requisitioning procedure. However, class IV supply is restricted to those items approved by higher headquarters.

d. Whereas class I requirements are based upon a relatively uniform consumption of supplies and normally are obtained on a daily basis, class II and IV requirements are periodic and are affected by such considerations as:

- (1) Seasonal change.
- (2) Increased needs preparatory to certain tactical movements and for the refitting of units after combat.
- (3) The regulation of items in short supply.
- (4) A normally longer interval between the time requisitions are initiated and the receipt of supplies.

e. Class II and IV supply operations are primarily an item problem, and supplies must normally be requisitioned by item for one or more of the following reasons:

- (1) Unlike class I supplies, substitutions for desired items cannot usually be made, since many items have no adequate substitute.
- (2) Clothing and certain items of individual equipment must be ordered by size.
- (3) Whereas all class I supplies are expendable, some class II supplies are considered expendable and some are not.
- (4) Different items have different storage characteristics and may be stored at different locations.

- (5) The distribution of scarce or expensive items is usually subject to additional controls established by higher headquarters.

87. CLASS II AND IV SUPPLY CONTROLS

The distribution of class **II** and **IV** supplies is subject to certain controls that are made necessary by the characteristics of these classes of supply and by the principle of supply economy. Faster-moving items such as socks or other articles of individual clothing, which are expended at a more nearly uniform rate, can be echeloned laterally and forward much as class I items are stocked in a theater of operations. The more uniform the consumption of supplies, the more practical will be a full pipeline with continuous and uniform input and a reasonably automatic flow. However, the periodic nature of most class **II** and **IV** requirements and the scarcity and expense of many items make such a flow of supplies impossible. There are more than 60,000 different items of quartermaster issue alone included in class **II** and **IV**. A full pipeline of these items would be prohibitive in cost and would require a larger stock of most items than would ever be used. Since balanced stocks cannot be maintained at all points of storage, slow moving items normally are stored only in key, base, and filler depots to permit centralized control and distribution forward on a special order basis. Supply economy, therefore, is achieved by two general methods of control:

- a.* Authorizations and administrative orders that govern the editing of requisitions at each echelon of the request system.

b. At the divisional level, constant liaison with units and unit trains to determine actual needs, together with such records and supply accountability as may be required by higher headquarters and are appropriate to the internal system of supply of the various requesting units.

88. DISTRIBUTION CONTROLS

There are normally four ways in which the flow of class II and IV supplies is controlled in a theater of operations: authorization, reclassification, regulation, and credits.

a. Authorized Items (Class II). Nonregulated class II items are those of which there is a sufficient supply in the theater and over which additional control is not exercised by higher headquarters. Appropriate publications such as T/A's and T/O & E's authorize normal individual and unit class II allowances. These authorizations control the request and distribution of nonregulated items because they are the basic means for determining that supplies requested do not exceed normal allowances.

- (1) Appropriate tables of equipment for units of the division authorize normal allowances of quartermaster organizational items,
- (2) T/A 21 authorizes normal allowances of items of individual clothing and equipment.
- (3) T/A 10-100 authorizes allowances of expendable quartermaster supplies, such as stationery, soap or other cleaning materials, and similar items.

b. Reclassified Items (Class II to Class IV). If a normally nonregulated class II item becomes in

short supply, distribution of that item may be controlled by reclassification. This is accomplished by limiting the authorized allowance of the item, since items in excess of allowances must be requisitioned with the approval of higher headquarters, according to procedures established for class IV supply.

c. Regulated Items (Class II or Class IV). Major items in short supply and articles that are costly or of a highly technical or hazardous nature are usually included on a regulated items list. Such lists are published periodically in orders from the headquarters retaining control of issue. Unless allocated in the form of credits or priorities, regulated items are issued only upon approval of the controlling headquarters. Regulated items may include those which are normally either class II or class IV. This is a method of control more generally used than that of reclassification.

d. Credits.

- (1) Regulated items are normally supplied by specific allocation. Credits are issued to provide commanders with definite assurance that supplies are available to them and to guide supply agencies in their issue. Credits usually are established at designated depots for a prescribed period of time. When credits are established, supplies are furnished as requested (no approval necessary) and are charged against the credit.
- (2) Theater headquarters will allocate regulated items to armies in conformity with their missions. Army may retain these credits and approve requisitions against its

total allocation, or in unusual cases may further allocate credits to subordinate divisions.

89. STOCK CONTROL

a. General accounting procedures in a theater of operations are prescribed by the theater commander. Such records as are necessary for quartermaster stock control at the divisional level will be required by the army and division commander (par. 41). Where accounting procedures are not specified by directives from higher headquarters, the division quartermaster will establish his own system in accordance with the needs of the division.

b. The quartermaster is not in a position to keep stock record cards on all units of the division. It is necessary, however, that he know the status of organizational clothing and equipment to as accurate a degree as possible. Some accounting system will be required to process unit requests and to administer efficiently the internal supply of the division. Recommended procedures are described in paragraph 90c.

Section II. SUPPLY REQUIREMENTS

90. DETERMINING REQUIREMENTS FOR CURRENT MAINTENANCE

a. Since quartermaster class II supplies must normally be requisitioned by item, both the amount and kind of supplies required will be stated in the originating requests made to the quartermaster by divisional units. At a time recommended by the division

quartermaster and announced through administrative orders, requests from subordinate units will be submitted to the supply section of the quartermaster's office. These unit requests are edited, and division requisitions prepared as described in paragraph 94.

b. The quartermaster's information on the need for normal current replacements of individual clothing and equipment comes only from unit requisitions. It is the responsibility of unit supply officers to provide this information promptly, since delays are sometimes encountered in obtaining division requirements and not all items will be stocked at a single supporting installation. It is the responsibility of the division quartermaster supply officer to process unit requisitions in accordance with army directives and to maintain such records of requests and issues as the division quartermaster directs.

c. The following general procedure is recommended for divisional accounting use, but will be modified as administrative orders may require:

- (1) The supply section of the office of the division quartermaster should keep a class II record book or card-index file, with a separate page or card for each item of quartermaster clothing and equipment normally handled for the division (fig. 13). The record for each item should be headed by the correct nomenclature of the item and, whenever available, the part or stock number.
- (2) When a unit request is submitted for the item, the date, name of the unit, the unit's

DESCRIPTION: CONTAINERS, FOOD, INSULATED, M-1944

STOCK NO. 64-C-1082

RECEIVED AND ISSUED REQUEST

DECREASES IN STOCKS

ISSUES

DATE	ITEM NO.	VOUCHER NO.	AMOUNT RECEIVED	BALANCE ON HAND	DATE	QUANTITY REC'D	VOUCHER NO.	INITIAL ISSUER	REPL. ISSUER	TRANSFERS OR MOVE	BALANCE ON HAND
1/13	121 MED. BN	203	19	1	1/16		1/20				
2/10	121 MP BN	208	8	1	2/13		2/16				
6/25	9TH MF. BN	283	40	9	6/26						
6/23	121 AAA BN	283	30	3	6/26						

WD AGO FORM 10-110
1 MAR 1944

SUPERSEDES WD AGO FORM 10-110
DATED 15 OCT 1941 (OMC 422)
WHICH MAY BE USED UNTIL
EXISTING STOCKS ARE EXHAUSTED

Q M CORPS

WAR DEP'T STOCK RECORD

WD AGO FORM 10-110

Figure 13. Stock record card (WD AGO Form 10-110).

authorized allowance, and the quantity of the item requested are entered on the item record. Authorized allowances must be kept up-to-date in accordance with current information (par. 33b).

- (3) The total number of each item on request determines the division requirement for current maintenance. These requirements will periodically be assembled or consolidated into division requisitions. At that time, the record for each item should be posted with the date and number of the division requisition.
- (4) When supplies are received, the transaction is completed by noting the quantity of the item issued to the requesting unit (if different from the quantity requested) and the date of issue. In cases of partial issue, the requesting unit should be advised as to the status of unfilled items and the action taken. Appropriate notation may be entered on the item record under "remarks."

91. AUTHORIZED RESERVE

- a. In a combat zone the authorized class II reserve for a division is fixed by army order. In certain tactical situations, such as an assault operation, the prescribed level is usually mandatory. When the reserve is not mandatory, it can be determined by the division commander within the limits of army authorization. In such cases, G4 will usually call upon the division quartermaster for recommendations.
- b. The class II reserve will normally include items

of clothing as well as a limited amount of individual equipment and some spare parts. The types and quantities of items held in reserve, however, must necessarily be determined by specific conditions in the field. Climate, terrain, probability and type of combat, and the flow of supplies will vary with the location of the division and the character of its operations.

c. For planning purposes, combat experience under average conditions has shown a workable class II reserve to be 100 combat uniforms and complete sets of individual equipment for initial issue to incompletely equipped replacement troops and for emergency clothing and equipment demands. In addition, approximately 1500 service (work) uniforms, either woolen or fatigue clothing, should be included for clothing exchange purposes where the operation of a limited division exchange is practicable (par. 150). Fast-moving items such as socks and under-wear are generally made available through direct exchange at forward army supply points (par. 98b) but may also be carried in limited quantities as part of the reserve when authorized. Nondivisional bath units normally carry a limited quantity of clothing for exchange purposes. When the services of the quartermaster bath company are available, a smaller divisional reserve should prove adequate. The division reserve of clothing should be initially stocked in tariff sizes, which will insure approximately an 80 to 90 percent accuracy of fit, depending upon the quantity of the item stocked (app. II). The reserve is then maintained on the basis of the items and sizes most in demand.

92. ADVANCE ESTIMATES OF SPECIAL REQUIREMENTS

a. General. In addition to normal requirements for current maintenance and the limited division reserve carried to meet emergency needs, there are certain periodic demands for supplies that arise from seasonal change or special operations. Change of season, for example, requires the quartermaster to anticipate and to determine clothing requirements for changing over from summer to winter uniform, or the requirements for tent stoves or other items needed seasonally. The quartermaster, through surveys and reports from unit supply officers, prepares an estimate for the division as a whole. Estimates of such added demands will be required by the army commander, generally from 90 to 120 days in advance of actual need, and will be submitted as directed. Airborne or other offensive operations entailing a higher percentage of loss and damage to clothing and equipment will also necessitate advance planning by the quartermaster through liaison with the division general staff.

b. Class IV Requirements. Class IV requirements will be determined by the process of editing unit requisitions against authorized allowances, and from estimates of special demands as described above.

Section III. REQUISITION

93. FORM OF REQUISITION

Class IV supply requirements will be requisitioned by formal request to higher headquarters. Class II

supplies, however, may be requisitioned by formal or informal means, as follows:

a. Per Diem Requests Not Itemized. Normally, class II supplies must be requisitioned by item. In the initial phases of certain combat operations, however, supplies may be requisitioned in the form of a simple statement of need for a given number of days' supply for a given number of troops. Such requests will be based on the anticipated per diem expenditure of supplies as contained in the logistical plans and administrative orders of higher headquarters. This form of requisition often is used in the assault phase of task force operations.

b. Direct Exchange. Where the direct exchange of unserviceable for like serviceable items is an available method of supply (par. 98b), turn-in or ordinary tally slips can be used to record the items exchanged, and no other form of requisition is needed.

c. Formal Requisitions. The general distinction between formal and informal requisitions is covered in paragraph 40. Formal requisitions for class II and IV supplies are distinguished as those which must include a statement of authorization or other justification for issue and an itemized description of the items requested. They may be made on DA AGO Form 446 (fig. 14). Formal requisitions are normally required for—

- (1) All items subject to controls established by higher headquarters.
- (2) All items not available through direct exchange, the request for which should include descriptive details for accuracy of

identification, such as specifications as to size, weight, purpose, or grade.

d. Emergency Requests. As in the case of all classes of supply, quartermaster class II items may be requisitioned in emergencies by any form of communication available.

ISSUE SLIP						PAGE 1 OF 1				
FROM	NAME OR STATION ACCOUNTABLE OFFICER Commanding Officer, Chantilly Depot ATTN: Supply Officer, Class II & IV Sec			NAME SLIP NO. 233		PROPERTY				
				TYPE OF ISSUE		QH				
TO	REQUISITIONED FOR UNIT 99th Infantry Division			REPLACES	REPLACES ITEM NO.	PROPERTY CLASS				
				X		ACCUMULATED STOCK				
ITEM NO.	STOCK OR PART NO.	DESCRIPTION		APPROX. AMOUNT	ITEM NAME AND DESCR.	UNIT	QUANTITY REQUESTED	UNIT COST	ESTIMATED COST	ACTION
	1	64-C-281	CAN, WATER, 5-gallon		68	54	ea.	14		
2	64-C-1082	Container, Food, Insulated, M-1964		70	58	ea.	12			

AUTHORITY		FOR THE COMMANDING OFFICER	
REASON OF QUANTITY IN "QUANTITY REQUESTED" COLUMN IS AUTHORIZED. THIS MANUAL "QUOT. QTY." WILL BE IGNORED AND WHEN ACCURATE QUANTITY IS NOTIFIED.		John Reese 7 January 51 John Reese, Lt Col, QMC	
QUANTITY SHOWN IN "ACTION" COLUMN NAME REQUISITIONER		QUANTITY REQUESTED IN "ACTION" COLUMN HAVE BEEN MADE	
DA FORM 446 Edition 26 Jan 47 May be used.		DA FORM 446 Edition 26 Jan 47 May be used.	

Figure 14. Division requisition for class II items (consolidated).

94. PREPARATION OF FORMAL REQUISITIONS

Division requisitions for class II and IV supplies are prepared by editing the requests of subordinate

units and consolidating or assembling a statement of the quantities and items required, as follows:

a. Editing. Normally, all units prepare separate requisitions for expendable items, nonexpendable general supplies, and sized items of clothing and equipment. The editing done by the quartermaster's office determines if supplies are authorized and available. However, when separate requisitions are not submitted, the following action is required:

- (1) Unit requests are first edited in accordance with current request and distribution controls (par. 88), as contained in appropriate authorizations and administrative orders. Items to be requisitioned will fall into three general groups—nonregulated class II, non-regulated class IV, and regulated class II or class IV.
- (2) Each group of items is then edited to separate expendable from nonexpendable supplies.
- (3) Supplies that are normally nonexpendable are further edited to separate individually sized items, such as clothing, from unsized items, such as organizational equipment.
- (4) As determined by the editing process, like items should be grouped together and a separate requisition prepared for each class of items.

b. Consolidated Requisitions.

- (1) The number of units drawing from an army depot or supply point should be kept to a minimum. Consequently, when unit requisitions have been edited, they are normally

consolidated into periodic requisitions for the division as a whole (fig. 14).

- (2) In preparing consolidated requisitions, the quartermaster supply officer should be guided by supply classifications as indicated by the item stock number, when this information is available. Stock numbers are listed for all quartermaster items in the series of quartermaster supply catalogs. The first two digits of the stock number identify the general class under which the item falls. Thus, class 24 covers items grouped under the general classification, *Duck: Canvas; Tentage*. Again, a typewriter, for example, would carry a stock number whose first two digits would be 54-, indicating that it comes under class 54, *Office Machines*. Storage characteristics of class II and IV items vary, and all items required will not always be stocked in a single depot. Critical and more expensive items are normally stored in key depots. These depots may be established at different locations. Even when most of the items required are stored at the same installation, like items will be stored together. If consolidated requisitions are similarly prepared, with a separate page for each major storage class involved, the time required at the depot to process requests and to issue division supplies will usually be shortened.

- (3) The number of copies of the requisition required for transmittal will be determined by army standing operating procedures. Normally, consolidated requisitions are prepared in quadruplicate. The supply section of the quartermaster's office retains one copy in a suspense file, pending the issue of the supplies or other action by the depot. The original and two copies are normally forwarded to the depot. When the supplies are drawn, the original will be signed by the division quartermaster's representative and retained by the depot as a receipt. One copy is returned to the division with its issue; this copy will indicate the supplies actually received or other action taken. This information becomes the basis for breakdown and issue to the appropriate divisional units.

c. Assembled Requisitions. Assembled requisitions are used only under exceptional or extenuating circumstances, such as, for example, heavy personnel losses in the quartermaster company or the presence of a large number of divisional attachments requiring class II and IV support. Assembled requisitions will normally be limited to unit requests for sized items such as individual clothing. Such requests may be assembled by division and forwarded to army without consolidation. They are normally transmitted in the same number of copies as consolidated requisitions. The number of copies required however, will be determined by army procedures.

d. Checklist. The following summary can be used as a checklist of the principal requirements in the preparation of requisitions:

- (1) So that all items requested may be readily and accurately identified, unit requests must be carefully edited and division requisitions prepared in sufficient detail, giving correct nomenclature, sizes (where applicable), and stock numbers (when available).
- (2) Requisitions for regulated and for non-regulated items must be prepared separately, since the requisitioning procedure will vary with the type of supply control (par. 97).
- (3) Requisitions for nonregulated class II items must also be prepared separately from requisitions for nonregulated class IV items.
- (4) Expendable and nonexpendable supplies must be requisitioned separately.
- (5) Items in different storage classifications should be listed on separate pages of the requisition to facilitate the drawing of supplies.
- (6) Requisitions must cite the authority for issue or must be accompanied by a request for approval by higher headquarters.

95. SUPPLY DISCIPLINE

Although proper editing and preparation of requisitions will assist in limiting unnecessary demands, supply discipline for class II and IV cannot be enforced through these measures alone. The division quartermaster must maintain constant liaison with major divisional units to insure a reasonable knowl-

edge of actual needs. Excessive demands which cannot be curtailed through unit supply officers should be brought to the attention of the G4.

96. REQUEST SYSTEM

a. General. The system for requisitioning quartermaster class II and class IV supplies will be established by standing operating procedures or administrative orders from higher headquarters. Normally, a general plan will be established for the administration of class II and IV supply throughout the theater, and army commanders will establish specific procedures to be followed by units under their command. As in the case with all classes of supply, the system of request and issue will be adapted to requirements arising from the geographical location of the theater and the nature of the tactical operations. Under combat conditions the processing of requisitions at all echelons is made as expedient as the situation and the availability of resources will permit, commensurate with adequate supply control.

b. Requisitioning Interval. Divisions normally requisition class II and IV supplies on an established periodic basis. A schedule for the submission of requests by subordinate units, usually at weekly intervals or every 10 days, will be established by the division quartermaster. Division requisitions will similarly be submitted according to schedules announced by the appropriate higher command quartermaster. Nonregulated class II items are usually obtained weekly. Cleaning and preserving materials are sometimes issued bimonthly and other expend-

ables on a monthly basis. The schedule, however, will be determined by administrative orders or procedures. When emergencies justify, demands may be placed at any time.

97. NORMAL REQUISITIONING PROCEDURE

For class II and IV supplies, unit requests are submitted to the division quartermaster either separately or through parent organizations, according to command channels. The quartermaster, in turn, prepares division requisitions which are transmitted as follows:

a. Requisitions for Nonregulated Class II Supplies. For issues within authorized allowances, requisitions are sent direct to the class II and IV section of the army depot. Unless otherwise prescribed, requisitions for nonregulated items do not require approval by higher authority and will not be processed by the army quartermaster's office prior to issue. The citing of appropriate T/O & E's or T/A's on the requisition is normally the only authority for issue that is required. Items not in short supply are issued as requested, in the order in which requests are received. Items unavailable from stock may be extracted and back-ordered from communications zone depots. If this is done, the division quartermaster will be notified when they may be drawn.

b. Requisitions for Nonregulated Class IV Supplies. Requisitions for nonregulated items in excess of allowances will be screened by the office of the army quartermaster. Approved requisitions are forwarded to the class II and IV section of the depot

from which issue will be made. The division quartermaster is notified of the action taken and draws approved items upon demand. Unit requests for class IV items not approved by the division quartermaster will be returned to the unit with a statement of the reasons the request was not approved.

c. Requisitions for Regulated Items.

- (1) Unless credits have been established for the division, requisitions for regulated items must be forwarded to the headquarters retaining control of issue. The controlling headquarters will issue directives prescribing the procedure for obtaining such items. The usual procedure is to send a request for approval through command channels.
- (2) Division requisitions submitted through command channels are forwarded in the name of the division commander. As the commander directs, requisitions for regulated items may require the approval of the division G4 or may be referred to other appropriate authority. Such requisitions are then forwarded through corps headquarters to army headquarters. Consequently, although corps is not ordinarily a link in the chain of supply except with respect to corps troops, division requisitions for regulated items are sometimes subject to corps supervision and approval for their allocation or priority of issue.
- (3) Credits seldom are used within the combat zone, because of the extensive administration required. Also, it is unusual for cred-

its allocated to an army to be further allocated by army to divisions. At the army level, rationing or other type of restriction may be imposed as a substitute, although the method by which control is maintained is a matter at the discretion of the army quartermaster within the policies prescribed by the army commander or army G4. However, if credits are issued to the division, no further approval is required, since any call against a credit has been, in effect, preeditited at the time allocation was made. Regulated items in army depots or supply points, assigned in credits to the division, may be drawn as needed by sending transportation accompanied by a request for the items to the proper supply point.

Section IV. DISTRIBUTION

98. DISTRIBUTION SYSTEMS

a. Normal Class II and IV Supply.

- (1) The normal distribution of class II and IV supplies in the combat zone is shown in figure 15. For the greater part of his requirements, the division quartermaster will send his trucks to the class II and IV section of the nearest army depot, where supplies will be drawn for the entire division. Army depot stocks of nonregulated items are, in turn, procured by requisition on the communications zone. Although

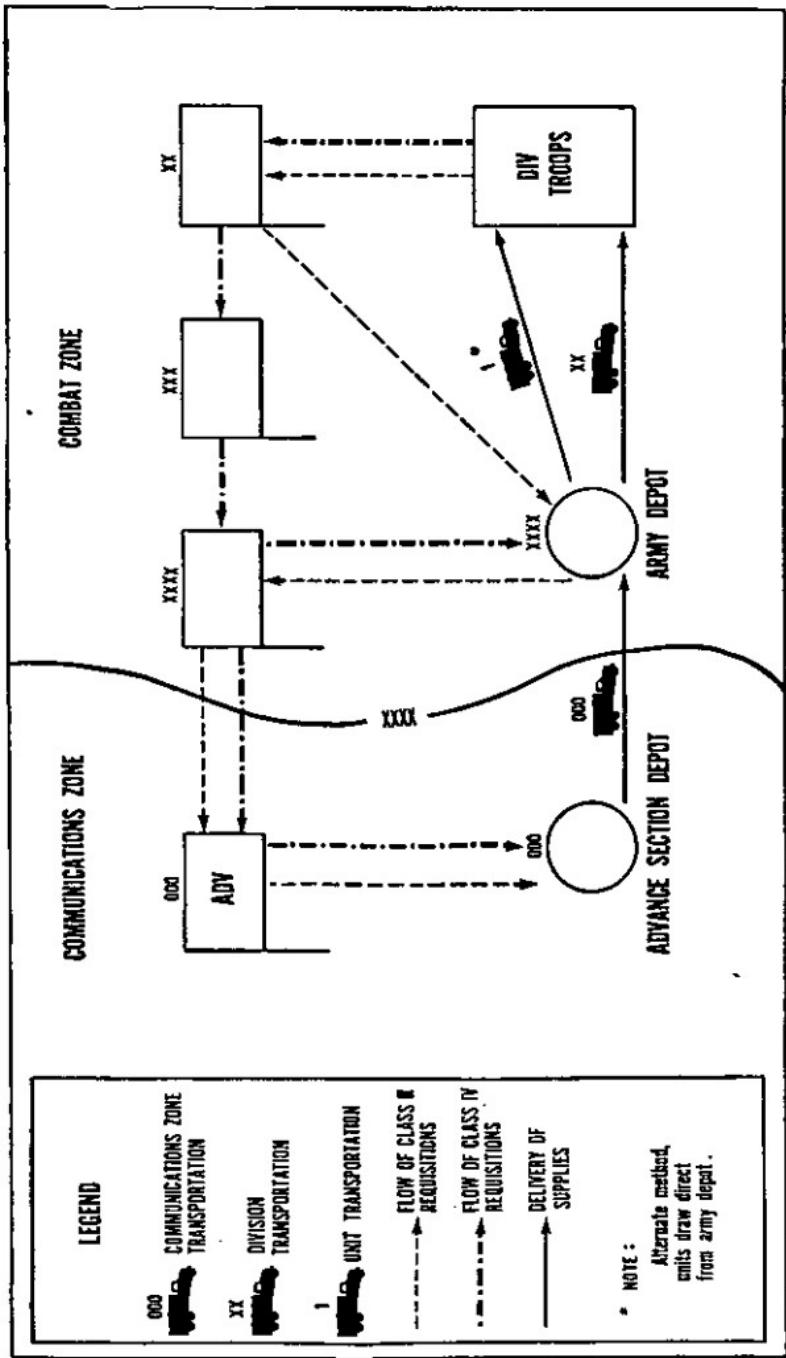


Figure 15. Distribution of class II and IV supplies in the combat zone.

army will establish forward supply points for class II and class III support, division trucks must as a rule go back to the army service area for class II and IV, since one depot ordinarily handles nonregulated issue for all army units. Such an arrangement is normally satisfactory because class II and IV supplies are requisitioned and drawn at less frequent intervals than other classes of supply.

- (2) Sometimes unit requisitions may be edited by the supply section of the quartermaster's office and arrangements made for larger organizations of the division (such as regiments) to draw their supplies direct from the army depot. Also, in unusual circumstances, arrangements can be made for class II and IV supplies to be delivered to divisional units at the army class I supply point, or unit distribution made to units by division (par. 67a).

b. Direct Exchange. Army must insure, however, that all troops are within reach of supplies at all times. A supplementary system of class II distribution is generally provided through direct exchange—

- (1) Limited stocks of fast-moving items (such as socks and other articles of clothing) may be maintained at forward army supply points, in order for divisions to replace these items by direct exchange or on certificates of loss. In such cases the division quartermaster, at his discretion, may either handle exchanges for the division as a whole,

or, under special circumstances, need only advise subordinate units that an exchange service is available. Whenever subordinate units draw supplies direct, however, the quartermaster is responsible for notifying them when and where exchange or issue will be made and for taking necessary steps to insure observance of reasonable standards of supply discipline.

- (2) In the case of mechanical equipment, direct exchange is the preferred form of resupply and operates to make unserviceable equipment available promptly for repair or recovery of essential parts (par. 101).

99. CLASS II AND IV DISTRIBUTING POINT

a. The class II and IV distributing point is operated by personnel of the class II and IV section of the divisional quartermaster unit, under the direction and supervision of the quartermaster and his designated class II and IV officer.

b. The operations of the class II and IV section include the drawing and transportation of bulk supplies from the army depot or other designated supply point, checking incoming supplies, and performing breakdown and issue to divisional units; the receipt, repair or evacuation for repair, and return of items of quartermaster issue; and the operation of the quartermaster salvage collecting point.

c. The division class II and IV distributing point will be selected in accordance with applicable rules for security and convenience (pars. 47-52). Some kind of cover, preferably a building or shed, is neces-

sary for breakdown and issue. The location, however, will vary, depending upon the nature of the principal operations required at any given time.

- (1) When the division reserve can be employed to operate a limited clothing exchange, the class II and IV section should establish operations in conjunction with the bath section of the field service platoon. Bathing facilities, the issue of clothing and other class II or IV items, and the receipt and return of articles requiring quartermaster repair can then be conveniently centralized at one point.
- (2) When a clothing exchange is not feasible, however, the class II and IV section may establish operations at or near the class I distributing point, where the division salvage collecting point is normally established to process salvage evacuated by unit supply trucks returning to the rear to pick up rations.

100. BREAKDOWN AND ISSUE PROCEDURE

- a. When a requisition has been filled, the supplies are checked and are brought to the class II and IV distributing point. The issue slip covering the items received by the division is delivered to the supply section of the quartermaster's office. This issue slip is normally a copy of the division requisition, with the "action" column noted as to quantities issued, or with other notation entered at the depot regarding the status of items requested.

b. The supply section computes the breakdown and prepares unit issue slips, as follows:

- (1) The items listed on the division issue slip are checked against the class II record book or card index file. By reference to the quantities received and the unit requisitions to be filled, unit issue slips are prepared in duplicate. Both copies will be forwarded to the distributing point.
- (2) In the event of shortages in certain items requested, the supply section must allocate the quantities received. In such cases, unit issue slips should bear a notation on the status of unfilled items.

c. From the unit issue slips, the class II and IV distributing point will accomplish the actual breakdown and issue of supplies. For issue slips covering assembled requisitions, no breakdown is normally required. The original copy of each issue slip is received by the unit supply officer or noncommissioned officer drawing the supplies. The duplicate copy is provided as a checklist for the use of the drawing unit. Since issues are made periodically, as determined by the supplies received, the appropriate unit supply officers will be notified by the quartermaster's office when to call for their supplies.

d. Received unit issue slips are then returned to the supply section to be retained as credit vouchers. The supply section, ODQM, completes the transaction, as follows:

- (1) Enters the credit vouchers in the record book or card index file, which is completed to show the date of issue, the units to whom

issue was made, together with the number of requisitions thus filled.

- (2) Removes the division requisitions thus completed from the suspense file. Incompletely filled requisitions, however, should be retained in the suspense file until final receipt and issue of all items has been accomplished or other appropriate action taken as the army depot may advise.
- (3) Files the received unit issue slips as credit vouchers.
- (4) Files as debit vouchers the copies of division requisitions, or other issue slips, returned by the army depot at the time division supplies were drawn.

e. For procedures where a clothing exchange is operated in connection with the bath point, see paragraphs 150 and 151.

101. PROCEDURE FOR THE RECEIPT AND RETURN OF REPAIRABLE ITEMS

a. The general procedure for handling items turned in for repair and return to the same organization or user is covered in paragraph 56b. Since most items will be evacuated to appropriate army repair shops, records of such transactions should normally be maintained by the class II and IV section.

b. Where a direct exchange is made from the class II reserve, the only record required is a list of the items issued from the reserve. As the like items received in exchange are repaired and returned to stock, they are checked off against the list of issues. Cloth-

ing that has been repaired should be resized, if necessary, and properly marked for reissue.

c. When items are left for repair and subsequent return, they should be deposited on a hand receipt. This receipt should be prepared in quadruplicate by the divisional unit concerned, itemizing the articles turned in for repairs. Disposition of the receipt is as follows:

- (1) One copy will be signed by the noncommissioned supply officer of the class II and IV section and retained by the representative of the unit leaving the articles for repair.
- (2) One copy will be retained by the class II and IV section until the repaired articles are returned to the unit. At such time, the unit's representative will receipt this copy for the articles returned.
- (3) The original and one copy will be turned in as a checklist of the articles to be repaired, when delivery is made to the appropriate army repair shop. The repair shop will receipt one of these copies, which is retained by the class II and IV section. The remaining copy is signed and retained at the repair shop when the repaired items are picked up by the division for return to the unit concerned.

d. If the items so turned in for repair are later determined to be irreparable, the supply section of the quartermaster's office will prepare the necessary requisitions to effect a replacement with serviceable items.

102. SHOE REPAIR

Shoes are an item which should receive special consideration from the quartermaster in effecting the conservation of class II supplies. Maximum use should be made of the shoe repair facilities provided by the army quartermaster, and care should be exercised that serviceable or repairable shoes are not turned in for salvage or needlessly replaced when they can be repaired. As authorized allowances normally provide two pairs of shoes per man, the quartermaster can operate a shoe conservation plan by announcing one day a week on which shoes may be turned in for repair by unit supply officers. Shoes turned in should be tied together in pairs, *cleaned* and tagged with the individual's name, rank, service number, and organization. Shoes are handled like other items left for repairs, except that when a regular schedule is thus provided, repaired shoes upon redelivery may be returned to subordinate units with their next ration issue.

103. SALVAGE OPERATIONS

Salvage as a source of supply for class II and IV items, and the operation of the divisional salvage collecting point are covered in paragraphs 53 through 55. According to the procedures established by higher headquarters, surplus or unserviceable items turned in through salvage channels may be listed on turn-in slips (fig. 16) or such other forms as may be directed.

TURN-IN SLIP				PAGE 1 OF 2 PAGES			
TO Commanding Officer ARMY SALVAGE COLLECTING POINT NO. 3		TYPE OF SUPPLY		RECEIVED BY			
FROM 99th Infantry Division		NAME OR NUMBER		GRADE			
ITEM NO.	ITEM OR PART NO.	DESCRIPTION	QUANTITY	RECEIVED	UNIT	RECEIVED	UNIT
1	55-D-422	Drawers, cotton, shorts size 30	FWT	ea	50		
2	55-J-220	Jackets, field, OD size 36 regular	FWT	ea	92		
3	55-J-230	Jackets, field, OD size 38 regular	FWT	ea	77		
Legend for codes: PWT = Piece weight due to wear and tear RWT = Received weight SGT = Salvage item of service MIA = Missing in action DIA = Discrepancy and other items				I declare that the above named Service are turned-in under the command name made out by [Signature] John Reese and that I am responsible for it. <u>John Reese</u> 7 January 1951 John Reese, Lt Col, QMC Turn-in of quartermaster issue P / Quantity column is authorized [Signature]			
Quantities shown in "Actual" column have been agreed. [Signature]				[Signature]			
WD AGO Form 447 WD AGO Form 447 8-447-1000 Bureau of Materiel Control 20 January 1951 This form is to be used for turn-in of surplus supplies. It is to be filled out in ink or typewritten. It is to be signed by the person turning in the supplies.							

Figure 16. Turn-in slip (WD AGO Form 447).

104. RECORDS

All records for the administration of class II and IV supply (except those pertaining to the receipt and return of repaired items as previously noted) are kept by the supply section of the quartermaster's office. Such records normally include the following:

- Copies of division requisitions returned by the army depot at the time issue is made (debit vouchers).

- b. Copies of unit issue slips covering supplies drawn from the class II and IV distributing point by divisional units (credit vouchers).
 - c. Copies of division requisitions pending the receipt of the items requested (suspense file).
 - d. A class II record book or card-index file showing by item the supplies required for current maintenance.
 - e. File copies of unit requests, showing the date on which the request was transmitted and the action taken.
 - f. An inventory of all items carried in the division reserve.
 - g. All pertinent authorizations and directives controlling the request and distribution of supplies, issue schedules, and other related information.
 - h. Turn-in slips or other records relating to the operation of the division salvage collecting point, as prescribed.

CHAPTER 6

CLASS III SUPPLY OPERATIONS

Section I. SUPPLY REQUIREMENTS

105. GENERAL CHARACTERISTICS OF CLASS III SUPPLIES

a. Class III supplies consist of fuels and lubricants for all purposes except for operating aircraft (class IIIA) or for use in weapons such as flame throwers (class V). Typical examples are petroleum products such as gasoline, kerosene, Diesel oil, fuel oil, and lubricating oils and greases; and solid fuels such as coal, coke, peat, and wood. Petroleum products are collectively termed POL and, with the exceptions mentioned above, are a quartermaster responsibility. Solid fuels, however, are not a quartermaster responsibility; they are obtained largely from indigenous sources and their procurement, storage, and issue are handled by the Corps of Engineers.

b. Class III supplies are both an item and a tonnage problem. As in the case of class I, reserve stocks in a theater of operations are echeloned laterally and in depth to handle possible breakdowns in the system of supply. Supplies for retail delivery, however, bypass intermediate holding points and move through supply channels to points of delivery at the required rate. Although the tonnage

involved presents a major problem in labor and transportation, both the administration and physical distribution of class III supplies are normally the least complicated of supply operations at the divisional level. Distribution of petroleum products does, however, involve constant vigilance to avoid contamination of product and to minimize the fire hazard.

106. ESTIMATING REQUIREMENTS FOR CURRENT CONSUMPTION

a. Class III requirements will be estimated each day by the supply section of the office of the division quartermaster. Unlike other classes of supply, the quartermaster's class III operations will normally not entail the receipt and issue of all supplies consumed by the division (par. 109). It is the responsibility of the quartermaster, however, to estimate what these total requirements will be and to submit such estimates to army, in order that supplies adequate for the support of the division will be available at all times.

b. In estimating requirements for current consumption, the quartermaster must consider the following:

- (1) Influence of tactical situations and movements.
- (2) Character and function of the class III reserve.
- (3) Consumption data and their significance for class III operations.
- (4) Adequate methods for estimating requirements based on the data normally available.

c. In general, the accuracy of any estimate depends upon consideration of all pertinent matters affecting consumption. There is, however, a practical limit to how elaborate the calculations based on such information need be to provide a satisfactory estimate. Consideration has been given in subsequent paragraphs to the need for simplicity and speed in the use of methods for estimating requirements from the sources of logistical data normally available.

107. INFLUENCE OF TACTICAL SITUATIONS AND MOVEMENTS

The flow of class III supplies is characterized by reasonably uniform demands but is subject to sudden peak loads based on particular tactical situations and movements. For this reason, there is no single best method for estimating division requirements that will be applicable at all times and under all circumstances—

a. Under slow-moving and relatively uniform conditions, requirements will closely approximate current consumption. At such times, the division organic reserve may be adequate to cover all or a major part of the total supplies required. Where the quartermaster is in a position to handle division requirements by means of daily retail issues to divisional units from the class III reserve, there will be no problem in determining requirements. The amount and kinds of supplies required will be whatever is needed to restore the reserve each day to its authorized level.

b. In fast-moving situations, or where the nature of the tactical operation places heavy demands upon the provision of class III supplies, total requirements can present a tonnage and transportation problem and, if critical, a control problem. Expenditures from the division reserve will under such conditions account for but a part of the volume of supplies required. Consequently, advance estimates of total divisional needs must be based upon additional logistical data that adequately reflect all elements affecting consumption. In approximate order of importance, the major factors are—amount of petroleum-consuming equipment in operating condition (equipment density); kind of equipment; distance, terrain, and rapidity of movement (for automotive equipment); operational hours in use (for equipment such as stoves, lanterns, or generators, which have a relatively fixed consumption rate); and climate.

c. Between comparatively static periods and periods of intensive operation, there will also occur a variety of situations where the logistical problem is related to a transition from one type of operation to another. In preparing for certain offensive operations, for example, a larger reserve level will normally be authorized but its use for immediate needs may be restricted. Following intensive combat, a higher proportion of automotive equipment may be marked for overhaul and repair, with a corresponding curtailment of fuel requirements but an increased requirement for greases and lube oil replacement.

108. AUTHORIZED RESERVE

a. General. The division reserve is prescribed at an authorized level by army. The bulk of the reserve, which is composed primarily of gasoline, will be determined by the number of 5-gallon drums authorized the division for its organic reserve, as shown in appropriate T/O & E's, plus whatever additional number of drums may be authorized by equipment modification lists or other directives from higher headquarters.

b. Organic Reserve. The number of drums organically provided for the class III reserve varies with the type of division, as follows: infantry or airborne division, 1,250 drums (6,250 gallons); armored division, 6,000 drums (30,000 gallons).

c. Augmented Reserve.

- (1) In the combat zone, army will normally authorize the division to maintain a three days' reserve level. Except for certain special operations, the prescribed level is usually permissive rather than mandatory, and stock levels will be maintained as the division commander directs, within the limits of army authorization.
- (2) As in the case of other reserves, the division quartermaster may recommend that an increased class III authorization be requested from army when operations warrant. Whenever authorization exceeds the organic level, army must supply the additional containers. A larger number of 5-gallon drums can facilitate the handling and issue of supplies, but the quartermaster must re-

member that when the division moves an increased reserve presents a transportation problem. Since the number of quartermaster trucks available for supply operations is limited, the request for a larger class III reserve must include the decision as to what other operations can be curtailed, unless additional transportation is also provided. In certain tactical situations, such as airhead and beachhead operations, or rapid advances when it is anticipated that supply lines may be interrupted or unusually taxed, a much larger reserve may be stockpiled to handle both normal consumption and emergency needs. Normally, however, the division reserve is necessarily limited for reasons of mobility.

109. RELATION OF THE ORGANIC RESERVE TO TOTAL DIVISION CAPACITY AND CONSUMPTION

Although reserves of all classes of supply are carried to be used as needed, the division class III reserve differs in that it is consumed and replenished continuously as the means for operating division distributing points. This reserve, however, represents only a fraction of normal division requirements for class III items. Approximately 95 percent of the reserve (by weight) is usually composed of gasoline; consequently, the limited function of the organic reserve is best illustrated by its relation to the division's total gasoline capacity and consumption.

a. Capacity. The capacity of the division in-

cludes the capacity of all vehicle tanks plus the total number of 5-gallon fuel drums organically provided. Division capacities vary according to the type of division and are tabulated in FM 101-10. An example of fuel capacity data is summarized in table II. It will be observed that the capacity of the organic reserve constitutes but a small part of the total division capacity: approximately from 4 to 8 percent.

Table II. Example of Fuel Capacity of Divisions

Division	Gasoline capacity*			
	Vehicle tanks	Drums, 5-gallon	Total	Organic reserve
Infantry-----	Gallons 105, 600	Gallons 49, 400	Gallons 155, 000	Gallons 6, 250
Airborne-----	97, 800	48, 200	146, 000	6, 250
Armored-----	237, 000	141, 000	378, 000	30, 000

*For latest computations, see FM 101-10.

b. Consumption. The amount of fuel and lubricants required to move the division 100 miles is tabulated in FM 101-10. An example of fuel consumption data is summarized in table III. Figures on the operational range provided by the capacity of the organic reserve are approximate and based on vehicle fuel consumption only, for road movement under average conditions. For cross-country battle conditions the distances shown would be reduced by 60 percent. But these figures will serve to illustrate that the organic gasoline reserve of the division would equal at most only about 9 to 20 percent of the total gasoline requirement for a movement of

100 miles, depending on the type of division and the nature of the move.

110. FUNCTION OF THE ORGANIC RESERVE

The summaries given in paragraph 109 are not intended for planning purposes; they are provided only to show the relation of the reserve to total division capacity and consumption. This relationship is important to the quartermaster's understanding of how a limited reserve functions to provide an integral part of the support required to meet total needs. The limited size of the reserve does not necessarily indicate its inadequacy for the following reasons:

Table III. Example of Fuel Consumption of Divisions

Division	Vehicle fuel consumption per 100 miles*	Operating range provided by capacity of organic reserve
Infantry	68,500	9
Airborne	61,700	10
Armored	146,000	20

*For latest computations, see FM 101-10.

a. A comparison of data on division fuel capacity and consumption shows a ratio roughly of 2 to 1. For an average movement by road of 100 miles, a division fueled to capacity would have potentially twice the amount of fuel required for the move. Thus, the division actually has an operational reserve equal to its total capacity, and it is proper to regard the organic reserve handled by the class III section

as an emergency or supplementary source of supply whenever a maximum movement is undertaken.

b. When the division is not on the march, approximately 4,000 gallons of fuel per day are required for administrative vehicles, kitchens, and gasoline-powered equipment. This figure includes allowances for wastage and warmup. Thus, in periods of limited operation, the organic reserve could provide, if necessary, the total class III requirements of the division.

c. The data summarized in table III are based on consumption per 100 miles. However, the number of miles per operational day can vary widely, depending on the type of division and the tactical situation. On roads, under favorable weather conditions, a motorized infantry division is capable of an administrative move of approximately 150 miles in 1 day; an armored division can cover approximately 100 miles. Under forced march conditions even somewhat greater distances might be covered. But such movements would not be possible in the combat zone if offensive operations were conducted cross-country. An infantry division that is not motorized would, on roads and under favorable conditions, be limited to a day's movement of approximately 15 miles; cross-country, an operational day would normally be reduced to about 10 miles. Armored movements cross-country also have a reduced operational range. What is significant here, in considering the utilization of the reserve, is not alone the distance of the movement but the factor of time in relation to displacement. Where the forward displacement of the division is not great, the

turn-around time to army supply points for resupply will not be unduly increased. Consequently, greater support is possible with a reserve whose level can be readily maintained by shorter hauls (par. 125a).

111. DATA USED IN ESTIMATING REQUIREMENTS

The quartermaster's estimate of division requirements is based upon one or more of the following sources of information: current expenditure reports on the operation of the division reserve, daily reports from divisional units (when required), standardized consumption ratios and other experience data compiled from previous operations, and planning data for impending operations.

112. REPORTS ON THE OPERATION OF THE RESERVE

The expenditure of the division reserve will be reported daily to the supply section of the quartermaster's office. These reports are prepared by the class III section from current receipts, issues, and balances on hand of each type of petroleum product handled at the division distributing point (fig. 17). In other classes of supply, the quartermaster determines his needs from strength reports (class I) or from unit requests (class II and IV) prior to issue. In his class III operations, however, the quartermaster must wait until drawing units place their immediate demands on his reserve before he knows exactly what his requirements will be. These reports on the expenditure of the reserve provide the most concrete and readily available data for predicting his operational needs from day to day.

Figure 17. Daily status report of gasoline and oils (DA AGO Form R-5652).

113. DAILY REPORTS FROM DIVISIONAL UNITS

When divisional units are provided with only a part of their needs at the division distributing point, they will submit to the quartermaster's office a daily report of fuel requirements, as administrative orders direct. This report will normally include a statement of fuel on hand and the estimated requirements for a specified consumption date (par. 120b). The requirement of daily reports from divisional units will be modified, however, to meet the needs of the current situation—

a. When, in slow-moving situations, the operation of the division reserve alone is adequate, additional estimates of unit requirements would be unnecessary.

b. Daily reports may be required from certain divisional units but not from others. For example, the larger units of the division, such as regiments, have a tank company section of a service platoon that carries a reserve of 5-gallon drums for tank refueling. A reserve supply of oil and grease is usually carried on company maintenance trucks and in the regimental maintenance sections. The smaller divisional units, however, have no such organic support: their transportation facilities are very limited and their reserve largely restricted to the 5-gallon drums carried by each truck for emergency resupply. Since the requirements of smaller units could be provided by the division reserve, in certain situations arrangements can be made for these units to draw their total requirements while the larger units draw on a prorated basis. Daily estimates would then be required only from the larger units.

c. Under combat conditions, units are not always in a position to provide complete daily status reports. It is often normal procedure for unit estimates to be limited to requirements for gasoline. Based on experience factors, computed engine oil, gear oil, and grease requirements are included by the quartermaster's office. When daily reports cannot be provided by divisional units, the quartermaster's office must be prepared to make all such estimates (par. 117).

114. EXPERIENCE DATA COMPILED FROM PREVIOUS OPERATIONS

Experience data are available from two main sources. The most satisfactory source is records compiled by the quartermaster's office from immediate experience in the field. Performance figures based on previous operations of the division more accurately reflect consumption factors peculiar to the given theater of operations, such as climate, general operating conditions, and the character of the roads and terrain as indicated by any abnormal proportion of low-gear operation. Where first-hand data are not available, use may be made of standardized consumption ratios and other logistical information provided by appropriate Department of the Army publications.

115. PLANNING DATA FOR IMPENDING OPERATIONS

In planning for impending operations, the division quartermaster must maintain close liaison with the general staff and analyze all available information bearing on the operations, such as intelligence and situation reports, administrative orders, and opera-

tional orders. Increased consumption requirements arise not only seasonally, as in the case of fuel for heating purposes, but whenever the division moves. In obtaining a total estimate of divisional requirements, data provided by the operation of the reserve and the estimates of the individual units must be correlated with such information as the following:

- a. Distance of the move.
- b. Character of the movement, whether by road or cross-country, including the condition of the road net and the nature of the terrain.
- c. Climate, season of the year, and probable prevailing weather conditions.
- d. Proportion of the division directly involved in the movement, including the number of divisional units and their projected tactical disposition.
- e. Distance to supporting supply agencies and their location during the operation.
- f. Authorization for an augmented division reserve, if applicable, and orders governing its utilization.

116. METHODS OF ESTIMATING REQUIREMENTS

Two general precautions must always be observed in estimating class III requirements. The method used must be appropriate to the data upon which the estimate will be based. Also, the method should not involve more complex calculations than the intended use of the estimate requires.

- a. Certain logistical data and methods of computation are proper to long-range planning or for staff use by larger mobile forces or fixed commands. They may have extremely limited, if any, applica-

tion at the divisional level. An example are estimates of fuel requirements based on experience factors of "gallons per man per day." In general, the accuracy of such estimates is proportionate to the number of men and the variety of units included in the factor to be used. Experience factors must be used only for the echelon to which the experience applies. The error which can result from the application of an average factor to a specific unit is illustrated by the following data from 5th Army operations:

Average gasoline consumption
(gallons per man per day)

Entire Army-----	0.98
Truck Company-----	5.55
Infantry Regiment-----	0.42
Armored Division-----	1.25

The use of long-range averages, while having the merit of simplicity, cannot be recommended for divisional use. Divisional requirements will vary with the situation too greatly, and no single factor can be established that would be adequate when applied to all types of operations.

b. Some quick and simple method, however, is desirable for estimating daily requirements where complex calculations for the sake of extreme accuracy are neither necessary nor practical. Estimates of division requirements are used by supply agencies as a planning basis for logistical support. However, in normal situations where no shortage exists in the forward movement of supplies, these consoli-

dated estimates become a guide to higher echelons on the number and disposition of petroleum supply units required for adequate support. Such units have a fairly standardized capacity, based on their size and equipment. Like the division quartermaster's operation of the division reserve, they normally operate to maintain their rated capacity. Consequently, so long as the divisional estimate is not grossly in error, normal operations of the supporting units will be adequate to cover divisional needs. Estimated requirements do not ordinarily impose a limit on the supplies that will be issued, and fuel tanks and reserve containers of all vehicles are filled when practical.

117. ESTIMATING GASOLINE REQUIREMENTS

a. Gasoline requirements are based on the type and number of vehicles to be used, and the distance to be traveled by the unit, the distance to be traveled in supply and reconnaissance, and the gasoline needed for kitchen ranges or other activities. To simplify these estimates, unit supply officers will determine the unit mile of their units. The unit mile is the amount of gasoline in gallons required to move all vehicles of the unit 1 mile. Future needs are figured in terms of unit miles, and the figure is converted to gallons when units submit their estimates to the supply section of the quartermaster's office. A percentage safety factor is added by the quartermaster.

b. The quartermaster's office should maintain a file of pertinent data on class III operations and requirements. These data should include the unit mile requirement for each subordinate unit of the divi-

sion, as reported by unit supply officers. Since unit factors are based on T/O & E vehicular allowances, the quartermaster's information should be reviewed periodically to insure that all data are maintained in accordance with current authorizations. Unit estimates of gasoline requirements, when provided, are consolidated and correlated with reports on the operation of the division reserve or other sources of information, as the given situation requires. When unit estimates are not submitted, or in estimating the gasoline requirement for a specific operation (par. 119), the unit mile factors recorded in the quartermaster's office provide the basis for independent computation.

118. ESTIMATING LUBRICATION REQUIREMENTS

Requirements for engine oil, gear oil, and greases vary with the number and type of vehicles in operation, general operating conditions, and temperature. Consumption of these three primary classes of lubricants by the chief types of combat vehicles is tabulated in FM 101-10. Average consumption per divisional unit is also given in FM 101-10. To simplify estimates, lubrication requirements are normally calculated as a percentage of the gasoline requirement. Converted to percentages, the data given in FM 101-10 may be summarized as shown in table IV.

119. PROCEDURE FOR ESTIMATING REQUIREMENTS IN A SPECIFIC OPERATION

Major factors controlling gasoline requirements in military operations are discussed in FM 101-10.

For the standard procedure for estimating requirements in a specific operation, reference should be made to FM 101-10, which illustrates how such requirements are computed.

Table IV. Example of Lubrication Requirements of Divisions

Division	Ratio of lubricant to gasoline (percent)		
	Engine oil	Gear lube	Grease, miscellaneous
Infantry-----	<i>Gallons</i> 2. 5	<i>Pounds</i> 2. 1	<i>Pounds</i> 1. 9
Airborne-----	2. 6	2. 2	2. 1
Armored-----	3. 2	1. 8	2. 1

Section II. REQUISITION AND DISTRIBUTION

120. REQUISITION

a. Form of Requisition.

- (1) The instrument for formally requisitioning class III supplies is the daily status report, which indicates estimated requirements for the next consumption period. The division's daily status report will normally also include information as to stock on hand (fig. 17). Subordinate units of the division are not in a position to keep stock records, and their daily reports to the quartermaster's office are often limited to an estimate of gasoline requirements.

- (2) Division estimates provide army supply agencies with information on the amounts and kinds of class III supplies required. Should the quantity of class III supplies required by the division be greatly in excess of original estimates, a supplemental report will be submitted.

b. Supply Interval. The supply interval—which is the time between the submission of estimated requirements and the consumption date for which the supplies are required—will be established by higher headquarters. Time must be allowed for the normal consolidation and transmission of supply requirements, but the interval will be kept to a minimum. Division estimates are usually submitted for supplies to be drawn from the army supply point 1 to 3 days later.

c. Normal Requisitioning Procedure.

- (1) Daily reports from subordinate units of the division are submitted to the supply section of the quartermaster's office according to the schedule and procedure announced in administrative orders. Unit reports are normally submitted either separately or through parent organizations, according to command channels. The division daily status report prepared by the quartermaster's office is forwarded to the appropriate army supply point charged with the class III support of the division.
- (2) Immediate demands for supplies become part of distribution and issue procedures, as described in following paragraphs.

121. DISTRIBUTION SYSTEM

The normal distribution of class III supplies in the combat zone (fig. 18) is as follows: Supplies move forward from communications zone depots, through army class III installations, through division and corresponding unit distributing points, to the using troops. The prescribed level of supplies at army class III depots is maintained by shipments from communications zone issue depots in communications zone transportation. The army class III depots ship class III supplies to the army class III supply points in army transportation. Divisions draw from a designated army supply point and haul supplies to division distributing points for issue to using units such as regiments and battalions. Regiments and in some cases battalions will also operate smaller distributing points for issue of supplies to forward combat elements, and depending upon the tactical situation, may draw directly from the army supply point as well as from the organic division reserve.

122. METHODS OF SUPPLY DISTRIBUTION

a. General. The general methods of distributing supplies to using units as described in paragraph 67*a* are applicable.

b. Bulk Petroleum.

- (1) Bulk petroleum is pushed as far forward as possible in pipe lines or large tank cars and trucks. When pipe lines, tank cars, and tank trucks are available, gasoline and sometimes Diesel fuel are delivered to a canning establishment which is located in

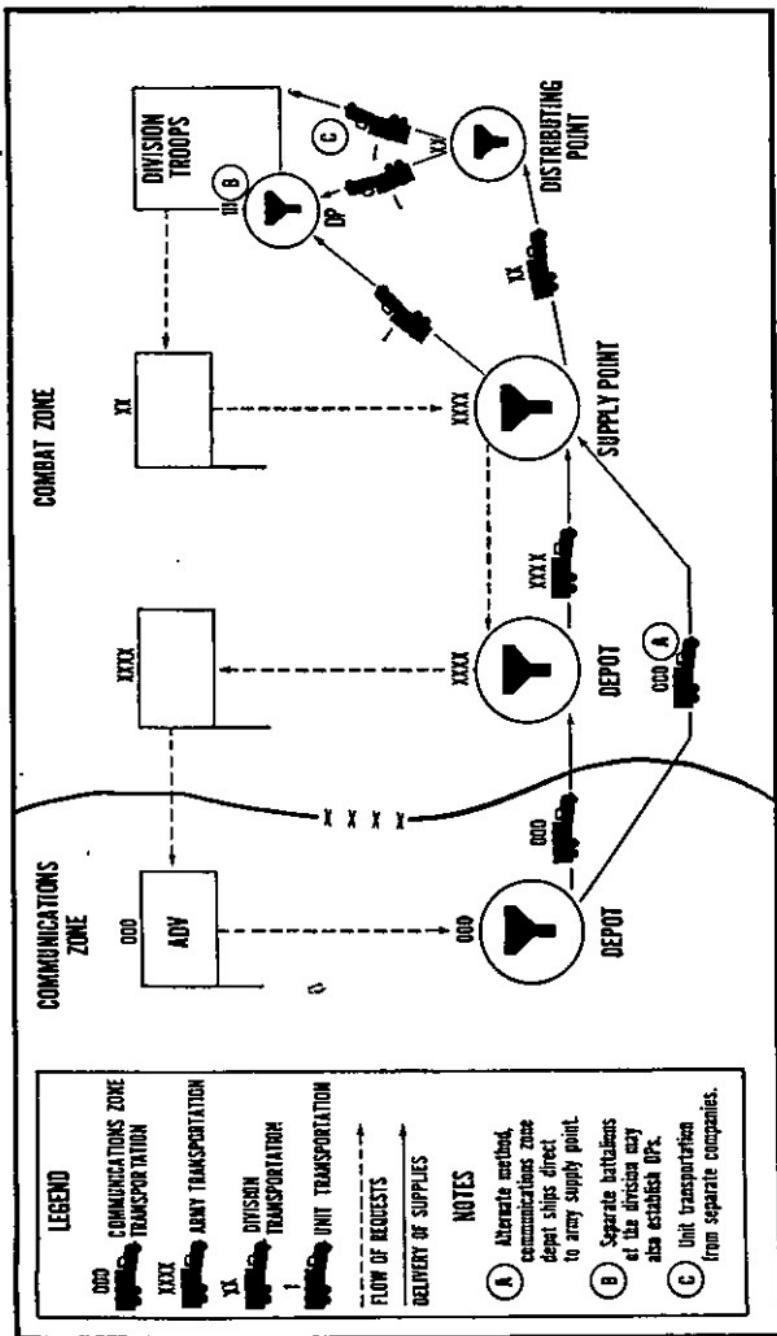


Figure 18. Distribution of class III supplies in the combat zone.

the army maintenance area or even farther forward and operated by troops of the army or communications zone. The bulk products are then packaged and distributed by army to army class III supply points.

- (2) The class III section of divisional quartermaster units is equipped to receive gasoline in bulk (tank trucks or railway tank cars). Bulk supply requires the establishment of a bulk reduction point where the product is decanted into 5-gallon drums before issue to using units. Consequently, this method of distribution at the divisional level is used only in emergencies, when prepackaged petroleum cannot be made available in sufficient quantity by army supply points.

c. Packaged Products.

- (1) Where facilities are not available for handling bulk products, packaged petroleum products are delivered from the communications zone in communications zone transportation in a manner similar to deliveries of class I supplies. Divisions normally draw their supplies in packaged form.
- (2) Liquid fuels are packaged in 5-gallon and 55-gallon drums. Lubricants and greases are handled in cans, pails, and drums of standard sizes. Lubricating oils are packaged in 1-quart cans (12 to the case), 5-quart cans (6 to the case), 5-gallon and 55-gallon drums. Gear lubricants are handled in 5-gallon drums, 25-pound pails, and 400-pound drums. Lubricating greases pack-

aged in 1-pound cans are packed 12, 24, or 48 to the case; 5-pound cans are packed 6 or 12 to the case. Greases are also packaged in 25-pound pails and in 100-pound or 400-pound drums.

- (3) For divisional distribution the smaller-sized containers are preferable. The 5-gallon gasoline drum is normally the largest standard container that, when filled, can be readily handled by a man. It is also the most convenient container for refueling vehicles. For reasons of transportation economy, 55-gallon drums may be handled as far forward as army supply points. However, they present a distribution problem to the division quartermaster, who must decant them into 5-gallon drums for normal issue to divisional units. For these reasons, petroleum products packaged in 55-gallon drums will not normally be issued to the division, except upon specific request or unless 5-gallon drums are in short supply. Similarly, the larger containers of lubricants and greases are seldom handled at the divisional level, because they are unwieldy and wasteful for small unit distribution.
- (4) Issues of liquid fuels are made on a strict basis of exchange of a full container for an empty container, unless certification is given that containers were lost in battle. Lubricants and greases are supplied on demand, in accordance with actual needs. They may or may not be issued on a container exchange

basis. Quart or pound size cans, for example, are expendable. However, in the case of all standard drums which can be cleaned and reused, a container exchange system will apply.

d. Filling Stations. When the situation permits, small supply points similar to commercial filling stations are established by army to support the operations of combat forces. These stations are located along lines of communication heavily used by trucks and at loading points, depots, transit bivouac areas, and other points where trucks congregate. Retail filling stations permit trucks to refuel while waiting and thus prevent loss of time and also the loss of truck capacity required if vehicles had to carry the full supply of gasoline needed for the trip. Where such stations are available, the subordinate units of a division will be expected to make full use of their services rather than draw supplies from division distributing points which necessarily handle a more limited reserve.

Section III. DIVISION CLASS III DISTRIBUTING POINT

123. OPERATIONS

a. The class III distributing point is operated by personnel of the class III section of the divisional quartermaster unit, under the direction and supervision of the quartermaster and his designated class III officer.

b. The division quartermaster is responsible for the distribution of the class III supplies composing

the division reserve, from which stock is established and operated one or more divisional distributing points as the tactical situation requires. While this reserve is intended primarily for support of the combat and combat support vehicles operating in the forward areas, it will also be used to supply other vehicles of the division. Fuel is also supplied for various other types of motor-driven equipment such as pumps and compressors, and for gasoline stoves, lanterns, and similar fuel-using items.

c. The operation of the distributing point is concerned mainly with the physical distribution of petroleum products, including the evacuation of empty containers to the army supply point, the drawing and transportation of reserve supplies, the emergency decanting and packaging of bulk petroleum, and issue to drawing units. However, the class III section also performs certain administrative functions connected with such operations, including records of receipts and issues and the daily inventory of supplies on hand which are included in reports to the quartermaster's office on the operation of the reserve.

124. REQUIREMENTS FOR THE CLASS III DISTRIBUTING POINT

a. *General.* The class III distributing point will be selected in accordance with rules for security and convenience of operation. The general requirements discussed in paragraphs 47-52 are applicable.

b. *Layout.*

- (1) Petroleum products will generally be stored in the open. A clearance of at least 250 feet from any combustible building is

recommended. The class III section is provided with a large wall tent that can be used for a control point for distribution operations. It should be set up at a safe distance from the area where the petroleum products are handled.

- (2) The site should be well-drained to prevent water damage. In the exceptional cases where reserve stocks must be maintained in larger quantities, reasonably level ground will be required for the stacking of containers. Depressed areas, however, must be avoided because dangerous gasoline vapors may collect and remain in them. Low hills or rolling ground can be used advantageously if the supplies are properly dispersed. In case of fire, contents of the drums would not flow from one stack to another but down into the gullies below. For the same reason, however, due precaution must be exercised that other areas of operation are not located immediately downgrade. The site must be so located that operations can proceed during any hour of the day or night and in any kind of weather.
- (3) The area required for operations will depend upon the nature of the site, the size of the reserve, and the required degree of mobility. When a high degree of mobility is necessary, supplies will be issued directly from truck to truck, with a minimum use of open storage and unloading. In such cases, traffic control becomes the primary

consideration. Whatever the method of issue, however, trucks arriving from the army supply point should be able to deposit full cans and pick up empty containers without crossing the line of travel of unit trucks drawing supplies from the distributing point (fig. 19). The advantages of natural concealment should be exploited whenever possible.

- (4) The use of water in fighting petroleum fires requires special precautions. Nearness to a natural water supply, however, can be a great advantage in fire control.

c. *Storage.* There is a daily turnover of class III supplies at the division distributing point and no storage is required unless a larger reserve is made necessary by special operations. If larger quantities of petroleum must be handled, proper stacking procedures should be adapted to divisional use.

125. DRAWING SUPPLIES FOR DIVISIONAL ISSUES

a. *Maintenance of the Reserve Level.* The division quartermaster must be prepared to keep his reserve up to full allowance continuously. By collecting empty gasoline containers each morning and transporting them for exchange at the army supply point, daily replenishment of gasoline will be maintained. Under combat conditions, when the demand upon the reserve is heaviest, more than one supply trip daily may be feasible, especially if the distance to the army supply point permits a relatively short haul.

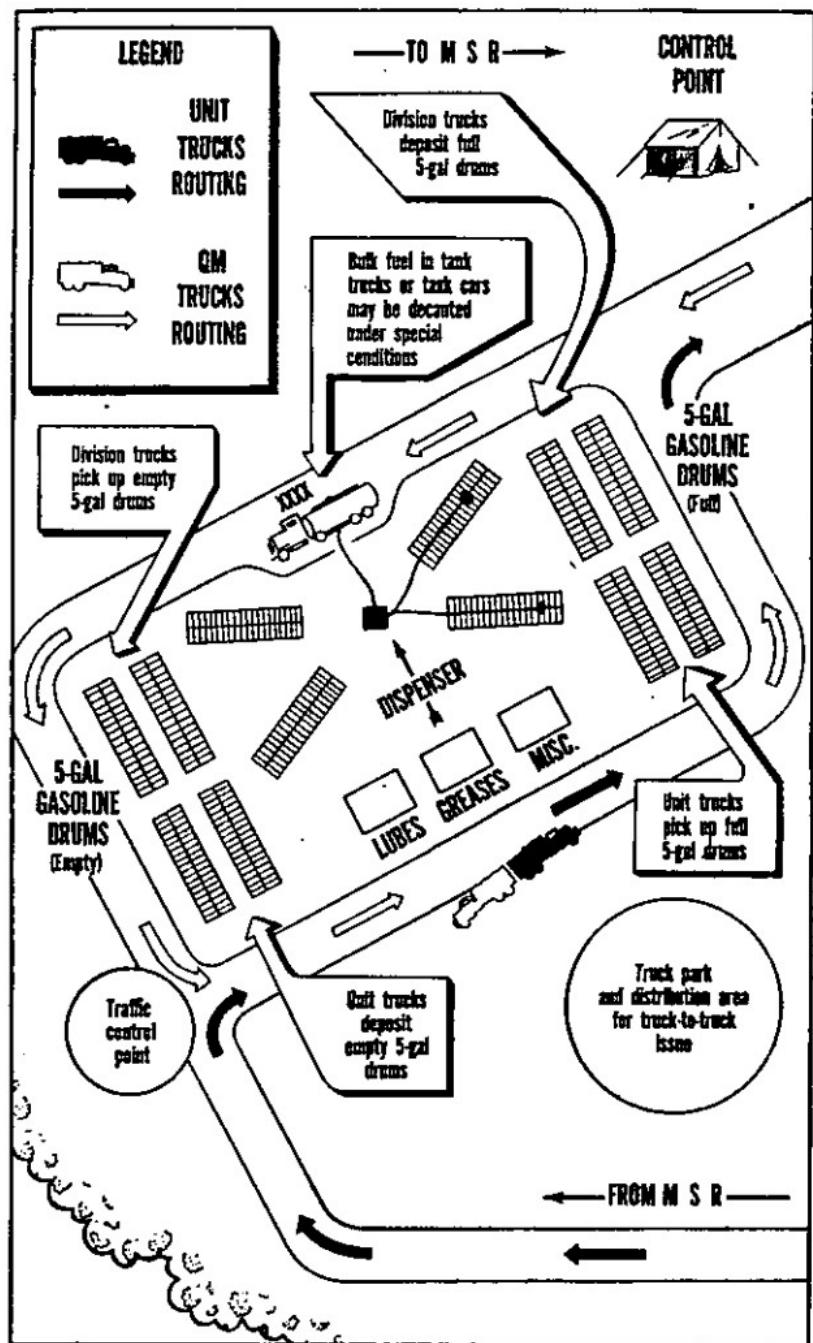


Figure 19. Example of the layout of a division class III distributing point.

b. Convoy Arrangements. Whenever practicable, army class III supply points will be located in the general vicinity of army class I supply points. If sufficient transportation is available and the time for drawing the supplies can be coordinated, it is often desirable for trucks making the class III supply run to form a single convoy with trucks of the daily ration train. Although a greater latitude is normal for the scheduled drawing of class III supplies, information on the transportation range and drawing schedule contained in paragraph 70*a* and *b* will be generally applicable. Trucks must operate in conformity with all regulations governing convoy security and traffic control.

c. Transportation Requirements. The number of trucks required to pick up class III supplies will be estimated in the same manner as for class I requirements (par. 70*c*). Load characteristics (weight and cube) applicable to class III supplies are tabulated in FM 101-10.

126. TYPES OF PETROLEUM PRODUCTS

The types of petroleum products handled by the division distributing point will vary mainly with changes of temperature, the kinds of equipment serviced, and supply availability.

127. USE OF CAPTURED SUPPLIES

Captured stocks of enemy POL supplies must always be tested before use. Samples will be forwarded to the nearest quartermaster petroleum products laboratory to determine whether a captured product is adaptable to the use of United States

forces and, for purposes of intelligence, to determine the geographical source of supply, the type of base stock, the processing methods employed, availability, and quality compared to the corresponding United States product. The disposition of captured supplies will be as directed by higher headquarters.

128. SCHEDULING ISSUE TO USING UNITS

To insure the greatest support of using units, it is advisable for the quartermaster, through liaison with unit supply officers of the division, to schedule the delivery of empty containers by service units to the distributing point at times when a maximum exchange of full containers can be provided. Otherwise, conflicts may arise between the time of unit supply trips to the division distributing point and the resupply operations necessary to maintain the division reserve. If the situation requires the operation of more than one divisional distributing point, unit supply officers should also be advised from which point supplies should be drawn. In all cases when the division reserve provides only a part of the daily needs of the division, issues will be scheduled on a quota basis.

129. ISSUE PROCEDURE

a. The division distributing point is operated in a manner similar to that of an army class III supply point but on a necessarily smaller scale. Tables of Equipment provide the service units of the principal divisional organizations with stock of 5-gallon drums and with trucks for fuel transportation. The service units exchange their empty containers for full con-

tainers from the division supply point on a can-for-can basis, in accordance with allowances established by the division quartermaster. Oils and greases are distributed as required on a similar quota basis.

b. Trucks from drawing units arriving at the distributing point will be routed so that empty containers may be discharged in one group and full containers drawn from a corresponding group. A checker stationed where the empty containers are discharged will tally the number of empties delivered, as a basis for the issue of full containers. Any items of oil or lubricant drawn by the using unit will be added to the tally slip, which is then receipted and retained at the distributing point as a credit voucher. When issue can be made immediately after the arrival of replenishment supplies for the division reserve, truck to truck distribution is preferable. The procedure is the same, except that a greater saving of time and labor is effected by this method.

c. Although gasoline issue is normally based on a can-for-can exchange, the division distributing point must be prepared in emergencies to provide fuel when containers have been lost or damaged in combat. Damaged 5-gallon containers should be turned in by the using units; they can be used for credit at the army supply point, where they will either be repaired or evacuated for salvage. Lost containers must be certified, so that replacements may be obtained from the army supply point on the next trip for replenishment supplies.

130. PRECAUTIONS IN THE HANDLING OF CONTAINERS

a. Leakage. All containers coming into the distributing point will be carefully checked for leakage. If the drum or can is leaking, it will not be placed with other containers but set aside for decanting or for immediate local use. Any gasoline that has spilled or leaked upon the ground should be covered at once with sand or dirt to retard vaporization. Empty containers must be protected against denting or other damage from careless handling. Constant supervision by officers and noncommissioned officers is necessary to insure that cans and drums are not thrown from or onto trucks.

b. Contamination. Petroleum products may become contaminated by dirt, rust, water, gum, or by accidental combination with other varieties of petroleum. Due care to avoid such contamination is vital if the products are to serve the purpose for which they are intended. All containers must be carefully inspected and, if required, thoroughly cleaned before re-use. It is preferable that containers be evacuated to army supply points for cleaning, and this will be the normal procedure whenever possible.

c. Strains. Lifting of heavy drums may cause strained backs. Personnel engaged in tasks involving lifting should be instructed in the most effective methods of lifting without injury. Whenever it is necessary for the distributing point to handle 55-gallon containers, labor saving devices should be employed, such as skids, ropes, and cranes of A-frames mounted on trucks.

131. SAFETY AND FIRE PRECAUTIONS

Many casualties and the loss of many thousands of gallons of fuel and lubricants have occurred because proper safety precautions were not observed. For the safety of both men and supplies the following safety measures must be rigidly enforced at all times and places where gasoline and oil are handled:

a. Under no circumstances will fires be built or matches lighted anywhere in the vicinity of gasoline operations. Smoking is positively prohibited at all times. If, at any time, civilian labor is employed to assist in the handling of fuels or lubricants, "no smoking" signs should be posted in the language of the country. Flashlights, other than the vaporproof type, should be kept away from cans, since the sparks caused by the battery on the contact point for the bulb can easily ignite gasoline vapor.

b. Containers, whether filled or empty, will be kept closed at all times. It must be remembered that it is the vapor from gasoline that explodes, not the liquid. Empty containers always carry vapor until they have been cleaned. A can should never be filled while it is on a truck, unless properly grounded. The static electricity generated by gasoline flowing through the hose may be sufficient to cause fuel to ignite and explode. The safe rule is to place containers to be filled on the ground. Striking the hose nozzle against cans or striking cans together must be avoided, since sparks created in this way are also a hazard. When cans are being filled, nozzles should be placed in contact with the edge of the opening. Contact should not be broken until the can is filled

and the flow of gasoline has stopped. Constant contact will ground static electricity.

c. All gasoline dispensing equipment and trucks used in the transportation of gasoline must be equipped with a ground chain, at least four inches of which drags on the ground, to reduce the hazard resulting from static electricity generated by the motion of the vehicle.

d. Waste and oily rags will not be allowed to collect, for this material can cause spontaneous combustion.

e. When gasoline must be filtered, a fine gauze will be used in the filling funnel. Gasoline will not be filtered through a chamois skin unless absolutely necessary, and under no circumstances under pressure. If gasoline must be so filtered, the funnel holding the chamois will be adequately grounded to the container into which the gasoline is being poured and will not be supported by wood or other insulating materials.

f. Personnel handling gasoline should never, under any circumstances, use it for cleaning purposes, since there is danger of lead poisoning when it is allowed to come into contact with the skin. All personnel must wear sound shoes and leather gloves, and wherever possible these items of clothing will be treated with dubbin to make them gasoline resistant. Shoes worn by gasoline-handling personnel should be free of metal plates and nails. Since gasoline vapors are toxic, personnel handling gasoline should be rotated as frequently as practicable, so that exposure will be reduced to a minimum.

132. FIRE FIGHTING

An established plan for fighting petroleum fires will be published in the standing operating procedure for the operation of the division distributing point. All personnel will be thoroughly trained in fire fighting, and fire drills will be held often enough to insure familiarity with the fire plan.

133. RECORDS

In addition to the experience data and other logistical information described in section I, the records kept by the division quartermaster for class III operations should include the following:

- a.* Daily reports on the operation of the division reserve, reflecting each day's receipts, issues and balances on hand of all gasoline, oils, and greases.
- b.* The original of each receipt from units drawing from the division distributing point (credit vouchers).
- c.* Copies of each day's receipts to the army class III supply officer (debit vouchers).

CHAPTER 7

SERVICE OPERATIONS

Section I. LOGISTICS—SERVICE AND SERVICE ELEMENTS OF THE DIVISION QUARTERMASTER SERVICE

134. PRINCIPLES OF OPERATION

In addition to the mission of supply, quartermaster operation in divisions includes limited organic bath, laundry, and graves registration services, as well as supplementary operations connected with both supply and service, transportation required as a part of the quartermaster mission, and the employment of labor troops when attached. (For transportation operations, see ch. 8.) Quartermaster services are provided at the divisional level in accordance with the following principles.

a. Bath Facilities. Personnel and equipment are provided for the furnishing of hot showers to personnel of the division on a scheduled basis.

b. Laundry Service. Personnel and equipment are provided to perform limited field laundry service. Utilization of the facilities of the laundry section will be determined by the kind and priority of work required, in accordance with the demands of the immediate situation (par. 155).

c. Graves Registration Service. The division quartermaster supervises the graves registration

service of the division, including initial identification, removal or burial, and the evacuation of personal effects of the dead. Personnel and transportation are organically provided both for the maintenance of records and for the actual operation of the service on a limited scale or supervision of the operations on a larger scale.

- (1) In static situations the division quartermaster provides all essential services, including the maintenance of records.
- (2) In active situations the quartermaster provides supervisory personnel for attached graves registration detachments or for other personnel provided for this work.

d. Nondivisional Support. The division is organized and equipped as a mobile fighting force, and a constant flow of supplies is necessary for its operation. The provision of bath and laundry services, although necessary to the health and morale of the troops is, however, like anticipated casualties, necessarily governed by the character of the tactical situation. Consequently, for reasons of mobility and flexibility of support, only limited service facilities are organically provided. Additional laundry and graves registration service, bath facilities, and supplementary labor for supply or graves registration operations will be made available through corps or army from nondivisional units operating in the field (par. 10).

135. LABOR POOL

a. In the division, there is no provision for labor. Combat units perform much labor in connection with

combat operations, but normally combat troops will not be assigned service labor tasks except in the absence of sufficient labor from other sources. Since there is no labor pool organic to the division, such a pool will come into existence only when personnel are specially provided for that purpose.

b. When the division quartermaster requires additional labor, it can be requested from corps or army service pools, of which quartermaster service companies form the nucleus. Labor pools may also include civilians and prisoners of war. Quartermaster operations in which general labor can be employed to supplement the capabilities of organic personnel include the handling of all classes of supply, loading and unloading operations, salvage recovery, the collection and burial of the dead, and the operation of motor pools.

136. PROCUREMENT OF SERVICE AND FACILITIES FROM LOCAL SOURCES

a. As in the case of supplies, various local services and facilities may be procured when the local situation warrants. In the combat zone, procurement of privately owned buildings or facilities for the use of United States forces is done without formality unless the tactical situation readily permits. In enemy countries, no rents or other compensation will be paid either for use or damage caused by the exigencies of war or by ordinary depreciation during occupation. When the tactical situation permits, a record of use is kept and owners are given requisition receipts. In friendly countries, claims for rent or

damage are handled by claims officers where there is no lease.

b. In liberated countries, the friendly government normally pays for labor. In enemy countries, labor is obtained by requisition on the civil authorities. In exceptional circumstances, a class "A" agent officer might pay for labor.

137. WATER SUPPLY

The supply of drinking water for the division is a responsibility of the division engineer. However, where water is utilized directly from streams, lakes, or other sources found in the area of operations, the location of division quartermaster services should be governed by the following priority of use, to ensure as little contamination of the water supply as possible:

- a. Drinking water.
- b. Water for cooking.
- c. Drinking water for animals.
- d. Shower water supply intake and run-off.
- e. Laundry water supply intake and discharge.

138. FIELD SERVICE PLATOON

a. *Organization.* The field service platoon comprises platoon headquarters, bath section, laundry section, and graves registration section.

b. *Operation.* The field service platoon is the operating element that provides organic quartermaster service and facilities to divisional units for bathing and laundering and for the appropriate recovery and disposal of the dead.

c. Relation to ODQM. The operations of the field service platoon are under the supervision of the purchasing and contracting officer, who is graves registration supervisor and chief of the field service section of the quartermaster's office.

139. PLATOON HEADQUARTERS

Platoon headquarters is composed of one commissioned officer, who is the platoon leader, and two enlisted men.

a. Platoon Leader. The platoon leader is responsible under the company commander for directing the operations of the platoon and for training platoon personnel in both the technical phases of service operations and in measures for security and defense. He may be assigned such other duties by the company commander as the situation demands.

b. Platoon Sergeant. The platoon sergeant is the noncommissioned assistant to the platoon leader and is also technically qualified as a laundry and bath supervisor. Through the section leaders, he co-ordinates the supply, maintenance, and operation of the service facilities provided by the platoon.

c. Truck Driver. The truck driver operates, and provides first echelon maintenance for, the $\frac{1}{4}$ -ton truck and trailer organically provided. He also has some training in the operation of the laundry units and in laundry processing techniques.

140. BATH SECTION

a. Organization. The bath section is composed of the following men, who operate the facilities of the bath point:

- (1) *Section leader.* The section leader supervises the movement and technical operation of the bath section and is responsible for the safe and efficient operation of the bath units. He is an administrative assistant to the leader of his platoon and advises him on technical matters relating to the bath facilities. He assists in determining the location of the shower point and the layout of equipment to insure adequate water supply, drainage, aerial and ground security, and availability to troops. He also supervises the erection of tents and coordinates the processing of troops through the various bath stations. Where a clothing exchange is authorized, the section leader may assist in supervising the issue of clothing.
- (2) *Wheel vehicle mechanic.* The mechanic inspects and performs organizational maintenance service and repairs on the vehicles organic to the bath section. He will also provide such service for other sections of the field service platoon, as required.
- (3) *Truck drivers.* The truck drivers, one of whom is squad leader, operate the trucks organic to the section and assist in the maintenance of their own vehicles. In setting-up and taking-down operations, truck drivers will also assist in unloading and loading and in other general labor tasks.
- (4) *Firemen.* The firemen tend, clean, and maintain steam pressure in the broilers of

the bath units and should understand the purpose and operation of all controls. In circumstances when one or more of the bath units may operate separately, the duties of the fireman include those of a temporary foreman for the operation of his unit.

- (5) *Engine operator.* The engine operator operates and maintains the gasoline engines of the units; makes inspections of gas, oil, and water levels; checks controls; cleans engine parts, as required; and assists in making minor repairs.
- (6) *Bath processors.* The bath processors, one of each bath unit, assist in assembling the shower heads, connecting water hose, pitching tents, and organizing the layout of equipment. After the unit has been set up for operations, they also assist in processing troops through the bath stations. They must know how to start and how to operate the water heating unit; how to check the water, oil, gasoline, voltage, and temperature dials to keep the water at correct temperature; and how to regulate all controls.
- (7) *Supply attendant.* The supply attendant performs general clerical work and keeps the records required by the operation of the section, such as the number of troops processed, shower schedule, supplies needed for operation, and such reports on the status of equipment as the section leader may direct. The supply attendant is also quali-

fied as a light truck driver and may assist in the duties of the bath processors.

b. Operation. The operation of the bath section is covered in section II.

141. LAUNDRY SECTION

a. Organization. The laundry section is composed of the following men, who operate facilities at the laundry site:

- (1) *Section leader and assistant section leader.* The section leader supervises and instructs section personnel in the operation and maintenance of the laundry equipment. He is responsible for the proper layout of trailers, tents, and equipment for operation; for estimating requirements and requisitioning laundry supplies; and for supervising procedures for the receipt and processing of laundry. As the noncommissioned officer in charge of the section, he must have a thorough knowledge of laundering techniques. He is assisted in these duties by the assistant section leader.
- (2) *Laundry equipment mechanic.* The laundry equipment mechanic adjusts, services, and repairs the mechanical equipment of the laundry units.
- (3) *Truck drivers.* Duties of the truck drivers are covered in paragraph 140a(3).
- (4) *Firemen.* The firemen tend the laundry units and assist in performing operator maintenance on the laundry equipment.

They are also qualified as laundry machine operators.

- (5) *Engine operators.* The duties outlined in paragraph 140a(5) are applicable.
- (6) *Laundry machine operators.* The laundry machine operators include the washmen, tumblermen, and their helpers. They receive soiled clothing from the laundry processors and further process it through the stages of washing and drying. Normally, one man operates the washer and a second man operates the extractor and tumbler. They must have a knowledge of cleaning materials, temperatures, and procedures for different types of fabrics and dyes, so that shrinking, fading or excessive weakening of textiles may be prevented. They also assist in setting up the trailers for operation.
- (7) *Laundry processors.* The laundry processors are personnel who process the work before and after washing. They receive the work, mark it if necessary, classify it, and pass it to the laundry machine operators. After the work is laundered, they fold and assemble it into bundles, or resize it for re-issue, according to the type of service being provided.
- (8) *Records checkers.* The records checkers maintain records of the receipt, processing, and disposition of soiled clothing handled by the laundry section and perform other clerical and typing duties as required.

b. Operation. The operation of the laundry section is covered in section III.

142. GRAVES REGISTRATION SECTION

a. Organization. The graves registration section is composed of the following men, who operate the division collecting point and provide graves registration service and supervision:

- (1) *Graves registration sergeant and assistant graves registration sergeants.* The graves registration sergeant and his assistants are graves registration technicians. The sergeant is an administrative assistant to the platoon leader and directly supervises the activities of graves registration personnel, both organic and attached. Through the division graves registration supervisor, the sergeant and his assistants coordinate the establishment and operation of the division collecting point. They receive remains evacuated from combat collecting points, assist in the inventory and proper disposition of personal effects, and in the initial identification of the dead. Depending upon the tactical situation, they will supervise the removal of the dead for interment in the nearest established cemetery or will make necessary preparations for temporary burial. They may also be required to direct search and recovery parties and to arrange for the conduct of religious services and the rendering of military honors.

- (2) *Registration clerks.* The registration clerks perform various clerical and typing duties in the preparation of forms and the maintenance of graves registration records. Under the supervision of the graves registration sergeant and his assistants, the clerks will record accurate physical description of deceased personnel, as required, including fingerprints, dental charts, and all anatomical characteristics which might be of aid in identification where conclusive evidence of identity is not available from other sources. The clerks will also prepare inventories of personal property belonging to the deceased, together with appropriate forms for transmittal. Other general clerical duties include maintenance of files and the use of a graphotype machine to emboss information on metal tabs for identification purposes.
- (3) *Truck drivers.* The truck drivers operate and provide first echelon maintenance for organic vehicles. They will also be required to assist in loading and unloading operations, pitching and striking tents, and such other supplementary duties as may be assigned.

b. Operation: The operation of the graves registration section is covered in section IV.

Section II. BATH FACILITIES AND OPERATION

143. OPERATING EQUIPMENT AND SUPPLIES

a. Bath Units. The usual bath unit consists of a water heater, a gasoline-driven pump to draw the water from a nearby stream or other source, and a shower frame which supports 24 shower heads. All this equipment is assembled on a two-wheel trailer which has a hinged towing frame. The heater is provided with a gasoline engine which operates the oil-burner blower and the pumping system. In addition to the permanently installed, turbine type, 60-gallon-per-minute main water pump, the equipment includes an auxiliary pump which is used as a booster.

b. Shelter. The bath section is provided with tents which are used as undressing, showering, drying and spraying, and dressing stations for troops being serviced, as well as for storage when required. In cold or inclement weather, tents are heated by tent stoves also organically provided. The squad tents, M-1945, have floor dimensions 16x32 feet. The maintenance shelter tents have floor dimensions 18 feet 2 inches, by 26 feet 2½ inches.

c. Trucks. The 2½-ton cargo trucks and 1-ton trailer are used to haul operating equipment and supplies. During relatively static periods, the trucks may also be used for such spot tasks as the transportation of troops to and from the bath point, or for salvage operations in conjunction with the division class II and IV supply and laundry sections.

d. Other Operating Equipment. Certain other equipment not provided by the Table of Equipment,

which will facilitate operations and add to the convenience of troops using the bath point, includes duckboards for the shower areas and some system of racks and shelving. These can be improvised from scrap lumber or dunnage, where available. The racks and shelves aid in keeping the clothing of the men separated and off the ground. They are most needed when the division cannot operate a clothing exchange and troops must use the same station on the bath circuit for undressing and dressing. In areas where the availability of scrap lumber may be limited, shelf space can be supplemented by an alternative use of cloth or canvas bags made from salvaged material. Not provided for in the Table of Equipment, canvas for the construction of walkways from station to station on a fair-weather bath circuit (par. 147c) must also be drawn from salvage sources.

e. Operating Supplies. Operating supplies, including gasoline, fuel oil, delousing spray, soap, and calcium hypochlorite (for foot baths) may be obtained through regular supply channels.

144. GENERAL REQUIREMENTS OF THE BATH POINT

The selection of a site for bath operations is influenced by the same general considerations of security from air and ground attack, previously discussed for division supply points (par. 48-51). The bath point must be reasonably accessible to the road net to permit the transportation of equipment and troops to and from the area. An adequate supply of clean water is a basic necessity, and the bath units should be set up on well-drained ground so that

used water from the showers may be diverted to a point down-stream from the point where fresh water is obtained.

145. FIELD LAYOUT PLAN

a. Area Required. The shape and size of the available area and the nature of the terrain will dictate in part the plan to be followed in laying out for operations. An area approximately 300 feet square should usually be adequate, unless the bath point is to be operated in conjunction with the laundry section or a clothing exchange has been authorized. When the bath units operate separately, space for a troop assembly area and for pitching one or two large tents near the water source will be sufficient (figs. 20 and 21).

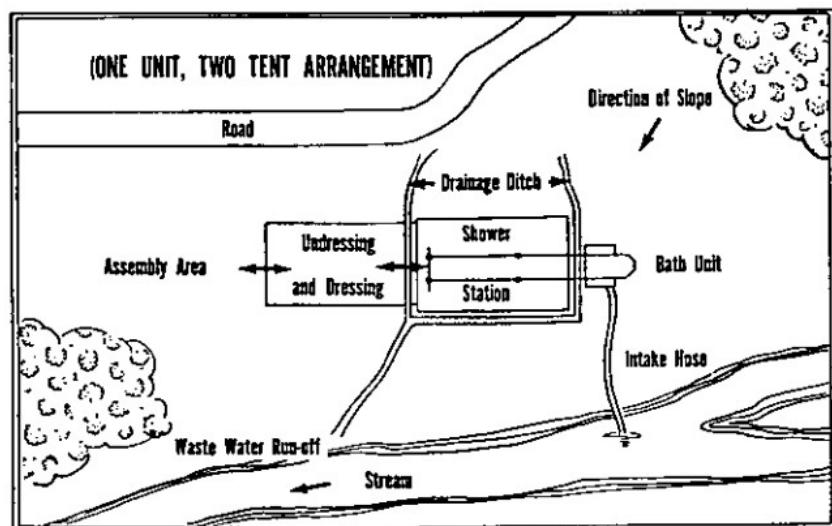


Figure 20. Schematic plan for bath point layout, showing a one-unit, two-tent arrangement.

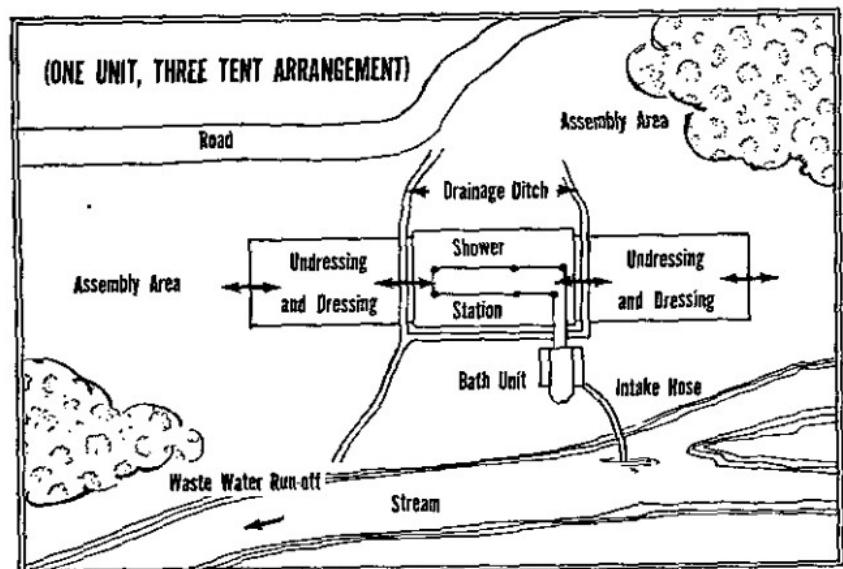


Figure 21. Schematic plan for bath point layout, showing a one-unit, three-tent arrangement.

b. Coordination of Units. The establishment of a bath point, together with the laundry units and a class II supply point, provides the most complete accommodations and service that the division quartermaster can offer with the personnel and equipment organically available. As described in paragraphs 154 and 155, organic laundry facilities are limited; the capability of the bath section is also limited in that only by a careful scheduling of shower periods can the entire division be provided with showers at regular and reasonably adequate intervals (par. 152). The advantage of employing the bath units together is that a large number of troops can be serviced in a given period of time. Whether the bath units will be so employed, or operated individually, must be determined by current conditions in the field, es-

pecially by the nature of combat operations and the accessibility to division troops.

c. Climatic and Seasonal Factors.

- (1) A further consideration affecting the layout of the bath point is the climate of the area. In warm or fair weather, showers can be operated out of doors. Such shelter as is provided for undressing and dressing, and for the exchange of clothing when authorized, may be set up at intervals, thus permitting a more flexible arrangement (fig. 22). In cold or inclement weather, however, troops must be protected from exposure, and some closely-spaced arrangement of shelters is a necessity. A straight line layout is normally used for cold weather operations.
- (2) Tents can be heated with tent stoves, which, together with the heat from the showers, should keep the temperature comfortably high. In order to conserve space within the inclosure, the bath trailer should be located outside the tent, at right angles to the shower frame inside (fig. 21). To accomplish this, it will be necessary to use two or more of the hose sections to couple the shower frame to the trailer. It will also be necessary to improvise supports for the end of the shower frame that normally is supported by the trailer.

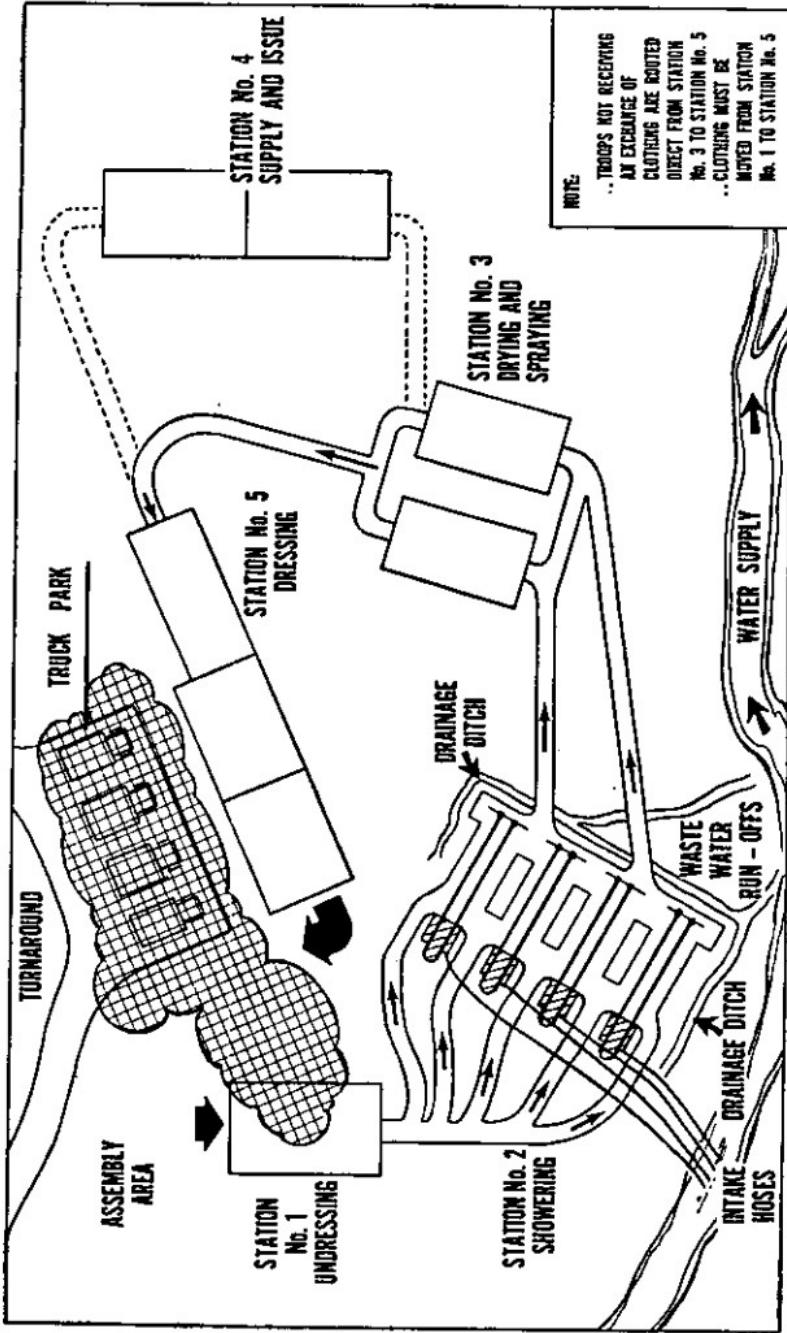


Figure 22. Fair-weather bath point layout, including clothing exchange (when authorized).

146. LAYOUT PLAN, USING BUILDINGS

Where buildings are available for use as a bath point, the processing procedures described in paragraphs 149 and 151 will be modified consistent with the amount and arrangement of floor space. The bath trailer should be backed against the outside wall at the point where the showers will be erected inside. The frame sections, which are attached to the fixed section on the trailer, can be passed through the side of the building. If windows are conveniently located, the pipes may be inserted through them. If not, it will be necessary to make holes through the wall, of sufficient size to permit the passage of the pipes. After the frame has been erected, holes should be drilled in the floor of the shower area for drainage, or other means of water run-off provided.

147. PREPARING FOR OPERATIONS

a. Whatever the layout of equipment, the basic points of operating procedure remain the same. Consistent with security, the bath trailer should be placed as near as possible to the water source and on the crest of a sloping area which will afford satisfactory drainage. Sufficient hose is provided to carry the water a distance of 200 feet. The auxiliary (booster) pump must be used to pump water to the unit when it is located more than 15 feet above the surface of the lake or stream. Care must be taken in inserting the hose intake into the water, so that it will not suck mud or gravel from the stream bed.

b. When the unit is assembled and before it is

placed in operation, strips of canvas or wooden duckboards, laid over a sand or gravel base, should be provided whenever possible and arranged beneath the shower frame to protect the feet of the bathers and to prevent the shower area from becoming muddy. The duckboards or canvas must be thoroughly scrubbed periodically to prevent the spread of athlete's foot or other skin infections, and should be left to dry in strong sunlight. A ditch, approximately 1 foot wide and 1 foot deep, should be dug around the shower area to carry the used water to a point downstream.

c. The provision of canvas strips approximately 3 feet wide will serve to keep troops in line and will protect their feet in passing from one station to another on the bath circuit (fig. 22).

d. In situations when one or more of the bath units may be out of operation for repairs, temporary field expedients can be used.

148. MAINTENANCE

The general maintenance of equipment is covered in paragraph 56. Detailed maintenance instructions for the bath units are included in manuals listed in appendix I, including maintenance schedules lubrication and preventive maintenance procedures, trouble shooting, and repair instructions. Precautions for operating the bath equipment under unusual conditions are given in appendix III.

149. PROCESSING PROCEDURE WITHOUT CLOTHING EXCHANGE

a. Undressing Station.

- (1) Troops will assemble at the undressing station according to the schedule for showers published in administrative orders. Groups are processed in multiples of 24, depending on the number of bath units in operation.
- (2) Unless a clothing exchange is authorized (pars. 150 and 151), the undressing station will normally also serve as the dressing station (figs. 20 and 21). This will be the case whether shelter is provided, or whether in warm weather the men undress and dress out of doors. Although a straight-line layout of tents is customarily used during bad weather when fresh clothing can be issued (fig. 24), this plan is less practical where no exchange is authorized. Consideration should be given to the fact that a separate dressing station will entail the time-consuming operation of moving from one point to another the clothing to which the men must return.
- (3) When shelter is provided, the men file into the undressing tent and stow their clothing and personal property on the divided shelves and racks provided, or in cloth or canvas bags improvised from salvage material. Shelf space should be numbered as an aid in keeping each man's clothing separated and as a ready aid to identification when the men return from the showers. If bags

are used, they can be stenciled with a number on the side. When these facilities cannot be provided, the men should be instructed to undress in two files, depositing their clothing in the same order in which they will enter and leave the showers.

b. Shower Station. At the entrance to the showers, each man is given a bar of soap. A group of 24 men per unit enter the showers in two files, 12 men filing down each side of the shower frame. The men remain under the showers for a period of between 7 to 9 minutes, depending upon the layout and processing procedure employed and the pressure of operations (par. 152).

c. Drying and Dressing Station.

(1) As the men return from the showers, they are issued paper towels if available. More often the men must bring their own towels, or dry off by removing excess water with their hands. If the men have in their possession any items of clean clothing such as a change of underwear or shirt, which they have brought with them to the bath point, the like soiled item can be used for drying off. Drying off presents no problem in warm weather; but in cold or inclement weather, if no towels are available, it may be necessary to allow a longer period for drying off. When necessary, the dressing station should be provided with tent stoves to facilitate the process. In moderate weather, stoves in the dressing and undressing tent may not be required, since steam

from the shower water often provides sufficient heat.

- (2) After dressing and before leaving the shelter, the men should be instructed to check their personal property to insure that nothing is left behind. Ordinarily, combat troops will carry few articles of value on their persons. It is often wise, however, for the division quartermaster to have the publication of shower schedules contain a notice that troops using the bath point should bring with them no personal items of value. The processor stationed at the dressing station should maintain constant supervision to insure the safekeeping of all items of clothing and personal property.

150. CLOTHING EXCHANGE

A clothing exchange, when authorized, will be operated from the limited stock carried in the division class II reserve. The class II supply point can then be established in conjunction with the bath point. The quartermaster is not, however, in a position to provide as a matter of course fresh clothing to troops using the division bath point. The clothing stock required for such an operation would be much larger than could be carried as a division reserve, and the division's organic laundry facilities are much too limited to maintain such a sizeable stock for regular reissue even were it to be authorized. Clean clothing is largely provided through scheduled laundry service allotted by corps or army, supplemented by the limited operations of the laundry section of the

division quartermaster unit (pars. 10 and 155). During rest periods when combat troops are returned from the front lines, an exchange of clothing may be made available at corps or army bath points upon appropriate arrangement by the division quartermaster with the corps or army quartermaster. A division clothing exchange may be authorized, however, to meet the interim needs of a limited number of troops in situations when corps or army facilities are not readily available. Issues from the division reserve will be per standard tariffs.

151. PROCESSING PROCEDURE WITH CLOTHING EX- CHANGE

With a clothing exchange, the bath point layout will normally include five stations on a circuit similar to that shown in figure 22.

a. Undressing Station. The procedure is the same as that outlined in paragraph 149a except that no separation of soiled clothing is necessary. Any articles of personal property will be collected by the processor in charge, for return to the men at the dressing station. As soon as the men have undressed, they proceed directly to the showers. Soiled clothing is removed from the undressing station and laundered either by the division laundry section or through laundry service allotted the division by corps or army. The clean clothing will be returned to the clothing exchange for future reserve or reissue.

b. Shower Station. The procedure is the same as that outlined in paragraph 149b.

c. Drying and Spraying Station. Upon leaving the showers, the men proceed to the third station on the bath circuit, where they dry off. If necessary, processors will apply a delousing spray or dust. Neither the division bath or laundry section is equipped to disinfect clothing, but this is no longer a problem since the control of parasites has been largely effected through the use of DDT.

d. Clothing Issue Station. From the drying and spraying station the troops move to the supply tent where they are provided with clean clothes. A complete exchange will include five items—Underwear shirt, underwear drawers, shirt, trousers, and socks. For facility in issue, clothing is stocked according to size, but issues from the class II reserve will generally be per standard tariff. Although it is desirable that troops be fitted as accurately as possible, the primary need under field conditions is for fresh clothing. A certain latitude in sizing is customary.

e. Dressing Station. The men then carry their clothing issue to the dressing station. Here, any personal property left in the custody of the processor in charge will be returned. After dressing, the men leave the tent, making certain that no items of personal property have been left behind.

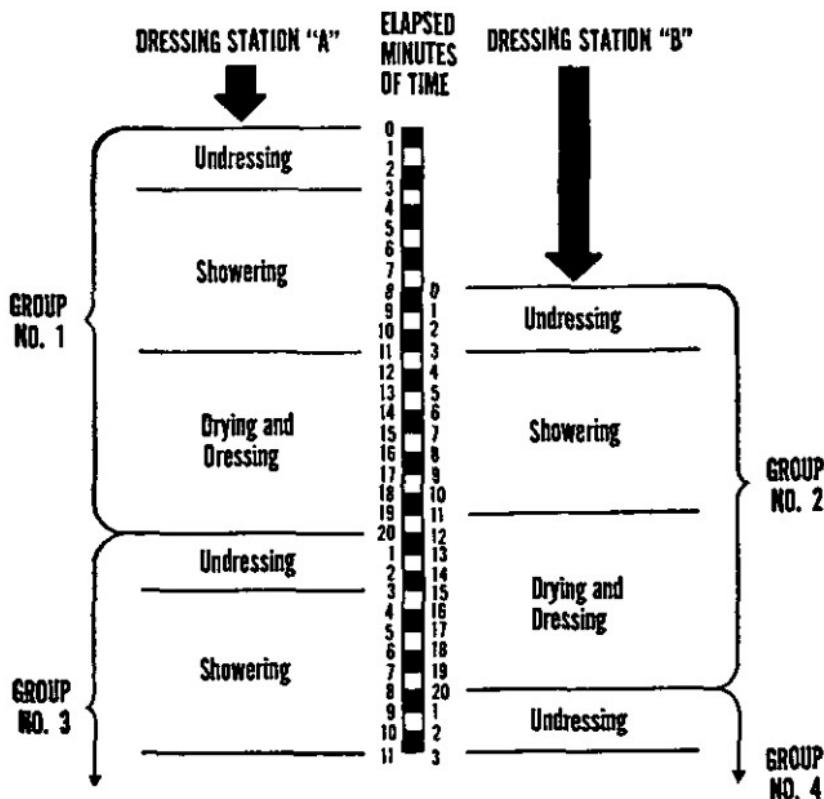
152. ESTIMATES OF SERVICE CAPACITY

a. General Considerations Affecting Operating Capacities. It must be understood that at all times a maximum effort will be made to provide bathing facilities as needed to all personnel of the division. Longer shifts and the fullest possible utilization of personnel are often required in the combat zone, and

the following estimates are intended for normal planning purposes only.

- (1) *Fair-weather layout estimates.* The capacity of the division bath point approaches its potential maximum when bath units can be set up out of doors and no shelter is required for undressing and dressing. Moreover, a larger number of troops can be processed when the bath units are employed as a battery of showers rather than operated at separate points. During an 8-hour operating day, an average of 6,000 men can be accommodated, allowing each man between 7 and 8 minutes showering time. In out-of-door operations, this capacity can be increased when necessary by allowing two men to use a shower at the same time.
- (2) *Cold-weather layout estimates.*
 - (a) The capacity of a single-unit, two-tent layout, as shown in figure 20, is approximately 550 men during an 8-hour operating day. This estimate is based on the following schedule for processing a group of 24 men: Undressing (3 minutes), showering (8 minutes), drying and dressing (9 minutes).
 - (b) The capacity of a single-unit, three-tent arrangement, as shown in figure 21, is approximately 1,000 men during an 8-hour operating day. This estimate is based on a staggered processing schedule, as shown in figure 23. The timing is so arranged that one group leaves the showers to dry

off and dress as a second group is ready to move to the showers. The alternation is continuous as long as new groups arrive. It should be noted, however, that the bath section is not provided with



(c) Estimates for similar straight-line layouts that employ more than one bath unit can be based on the foregoing examples. Variations on the alternate group method described above are especially useful when a bath unit may be temporarily out of operation for repairs. The system of permitting two men to use the same shower is less feasible in cold weather operations, because of limited shelter space for dressing and undressing.

153. RECORDS AND REPORTS

a. Operations. The operations of the bath section will be governed by the division shower schedule, which publishes to the command such information as the location of the bath point or points and a schedule of dates on which units may use the facilities provided. The bath section will keep a record of the number of troops processed and will submit reports of operations to the field service section of the quartermaster's office. The operations report will be prepared and submitted at intervals as directed. It will normally include a statement of the number of bath units in operation, total operating hours, names of the divisional units served, number of troops processed, and a notation of any additional service rendered, such as an issue or exchange of clothing.

b. Maintenance and Supply.

- (1) The bath section will also keep maintenance and supply records required for the operation of the section. The forms used will

be prescribed by higher authority or may be improvised to meet the local situation and the needs of the section.

- (2) Supply records should be kept of supplies used and supplies on hand. Expendable class II supplies are obtained by requisition from normal supply channels; requests are submitted through the designated quartermaster unit supply officer. POL supplies will be drawn from the class III distributing point. Records of the requisition and issue of clothing provided at the bath point are normally the responsibility of the class II and IV supply section.

Section III. LAUNDRY FACILITIES AND OPERATION

154. LIMITED CAPACITY OF THE SECTION

The capacity of the laundry section is limited to the service that can be provided with the organic laundry units. Based on a 19-minute washing formula, the production rate per unit is about 100 pounds per hour. This includes an operating safety factor and an estimated 10 minutes per washer-load for loading and unloading operations. With both units in operation, the capacity of the laundry section will be approximately 22,000 pounds weekly when operating on two 8-hour shifts, 7 days a week. The amount of time required to launder a specific number of items can be estimated from the washer-load capacities tabulated in appendix II, paragraph 11 and the standard processing time required by the appropriate washing formula (app. III). Laundry

foremen should be able, however, to convert work received in bulk to a poundage basis by inspection.

155. METHODS OF EMPLOYMENT

According to current needs, the quartermaster will determine the best method of employing the laundry facilities at his disposal. Since the organic facilities are limited and are intended to provide only a small portion of the total laundry service required by the division, efficient operation demands a careful scheduling of the work load. The principal alternative methods of employment are as follows:

a. Combined Operation to Provide a Clothing Exchange. The laundry section may combine operations with the bath section and the class II and IV supply section to provide a limited clothing exchange at the division bath point. Fresh clothing is issued from the class II reserve as soiled clothing is laundered and returned to stock. Either a complete change of clothing may be provided for a small number of men, or a partial change, limited to selected items such as underwear and socks only, may be provided for a larger number.

- (1) For a complete change of clothing, the operation of both laundry units during a 16-hour day can provide clean clothes for approximately 600 men, or the number processed by one bath unit (to include issue) during a 10-hour day. This arrangement can be used to support combat units held in reserve or temporarily withdrawn from the line for a brief interval.

- (2) When only a partial change of clothing is provided, the items normally desired will be clean socks and underwear. The operation of both laundry units during a 16-hour day can provide one pair of socks and one set of underwear for approximately 4,600 men (summer issue) or for approximately 1,600 men (winter issue).

b. Supplementary Service to Divisional units.

When local conditions make a clothing exchange at the bath point impractical, the laundry units may be employed to provide supplementary service direct to units of the division. Selected items such as socks or underwear can be laundered on an announced schedule, rotating the service among the various units as required. Soiled clothes are collected into unit bundles and delivered to the laundry section or to the class I distributing point by unit vehicles returning for supplies. Finished work may be picked up at the laundry point or often is returned to units with their ration issue. The drawing units make distribution to their troops.

c. Processing Salvage. The quartermaster can operate his laundries to relieve the drain on supply channels by selecting garments in short supply from his salvage pile.

d. Joint Operation With Attached Laundry Unit.

When the division is supported by an attached laundry platoon, the quartermaster can employ his organic units in joint operation to provide the type of service normally supplied by corps or army. In such cases, operating procedures will be similar to those used by a quartermaster laundry company, semimobile.

156. OPERATING EQUIPMENT AND SUPPLIES

a. Laundry Units. The laundry section is equipped with the two-trailer type of laundry which provides small, light, and mobile laundry facilities. Each complete unit comprises two trailers. One trailer is equipped with a hot water heater, washer, extractor, stationary drain tub, and a portable pump. The other trailer carries a drying tumbler, an engine-driven generator, and a hose reel and hose.

b. Water Tanks. Two water tanks are provided, each with a capacity of 250 gallons. Each tank is mounted on a 1-ton trailer.

c. Trucks. The laundry-unit and water-tank trailers are towed by 2½-ton, 6 x 6 trucks, which also carry personnel and organizational equipment and supplies.

d. Shelter. Three tents are provided—two of these are maintenance shelters; the other, a squad tent, M-1945. They are used for housing the laundry equipment, for the receipt and processing of laundry work, and for the storage of finished work and supplies.

e. Other Operating Equipment. Other equipment organically provided includes canvas laundry baskets, canvas water buckets, tent stoves and heaters, immersion-type water heaters, a marking-pin outfit, and folding tables.

f. Operating Supplies. Operating supplies, such as gasoline and lubricants, detergent, and sour (for rinsing), may be obtained through regular supply channels.

157. REQUIREMENTS OF THE OPERATING SITE

a. General.

- (1) The basic requirements of an operating site for the mobile laundry are similar to those for the division bath point. An adequate supply of clean water is a primary requirement. About 200 gallons an hour are required for each laundry unit, and the units should be located as close as possible to the source of supply. Each unit is provided with 200 feet of intake hose. However, shorter distances reduce the load on the water pump; and if the lift from the water source is 15 feet or less and the horizontal distance is 50 feet or less, it will not be necessary to use the auxiliary pump. If the operating site is located in a town that has a local water system, the intake hose may be connected with the local supply.
- (2) The site must be well drained and so located that waste water can be carried away without contaminating the intake source. Since the laundry units operate under tentage, sheltered locations can help to provide protection against winter wind and cold and aid in concealing operations from enemy observation and attack. In hot climates the location should permit as much air circulation as possible. Stream or lake-side areas that might be swamped by flash floods or rising water should be avoided, and there must be sufficient hard standing

to support the trailer and section vehicles under any weather conditions.

b. Field Layout Plans. The field layout plan will be determined not only by the nature of the operating site but by the method in which the units are employed. Normally the laundry units operate at one point, but they may be established at separate locations. Laundry operations may be conducted independently or in coordination with the activities of other quartermaster section (par. 155).

- (1) Operations combining the services of a bath point and clothing exchange may be planned using a layout similar to that shown in figure 24.
- (2) When the laundry facilities are operated independently, a layout similar to that shown in figure 25 may be used.
- (3) When laundry facilities are employed in conjunction with the division salvage collection point, a layout similar to that shown in figure 26 may be used.

158. PREPARING FOR OPERATIONS

a. The two maintenance tents will be pitched to house the laundry trailers and the squad tent will be pitched to handle the receipt and issue of laundry work.

b. The two trailers composing a laundry unit must be set up parallel to each other with drawbars in the same direction, preferably echeloned so that the tumbler is opposite the extractor. In this position laundry removed from the washer can be readily placed in the extractor and then in the drying tum-

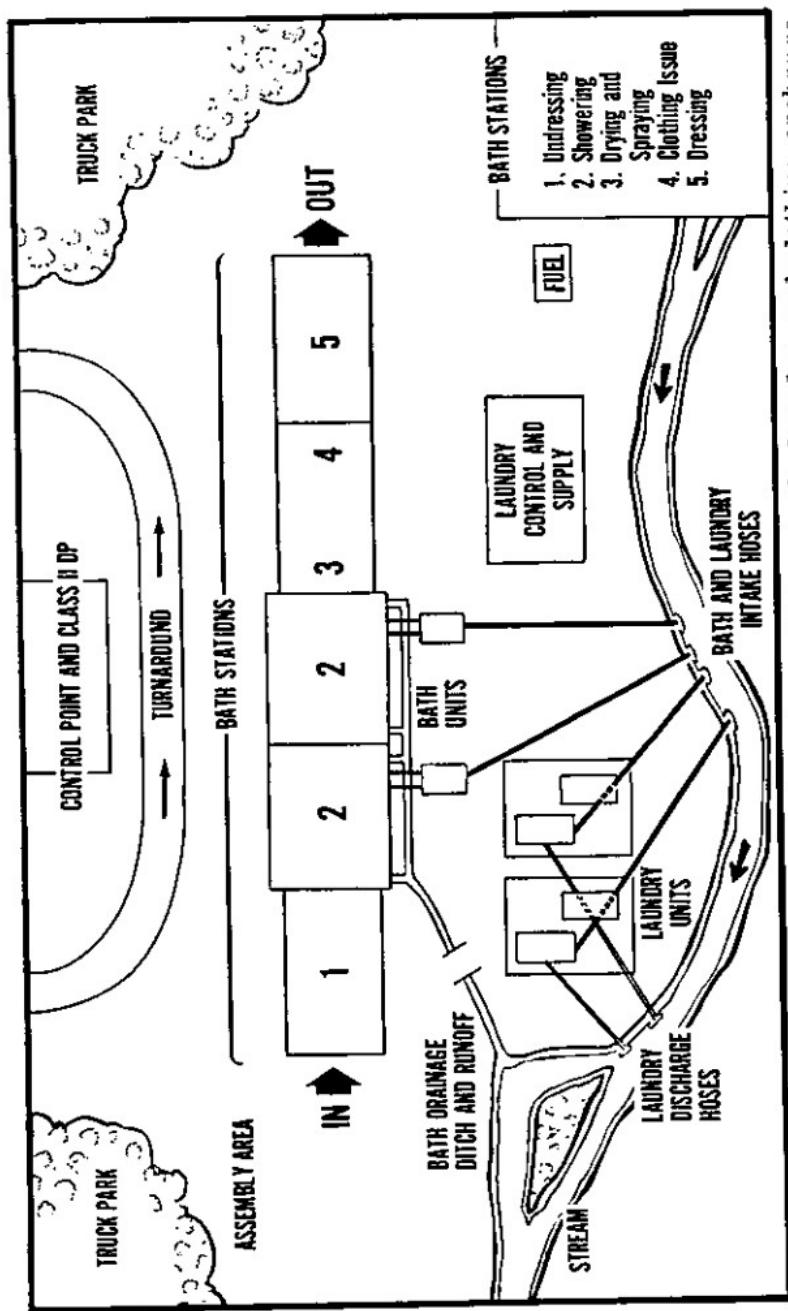


Figure 24.—Schematic plan for a layout combining bath, laundry, and clothing exchange facilities.

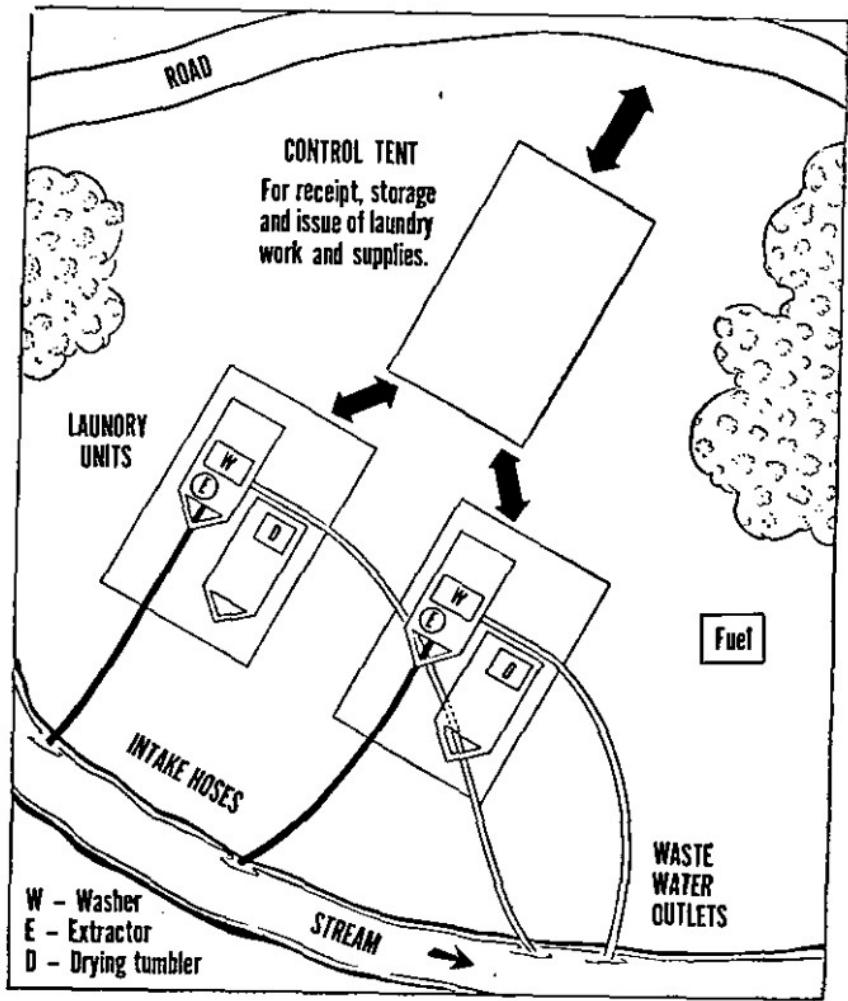


Figure 25. Schematic plan for field laundry layout, showing a two-unit arrangement for independent operation.

bler with an economy of labor. When properly positioned, the trailers are leveled by using the corner jacks. The hoses and power lines are then connected, and the intake hose is laid out to the water supply along as straight a line as possible. The strainer attached to the intake hose should rest on a rock or be

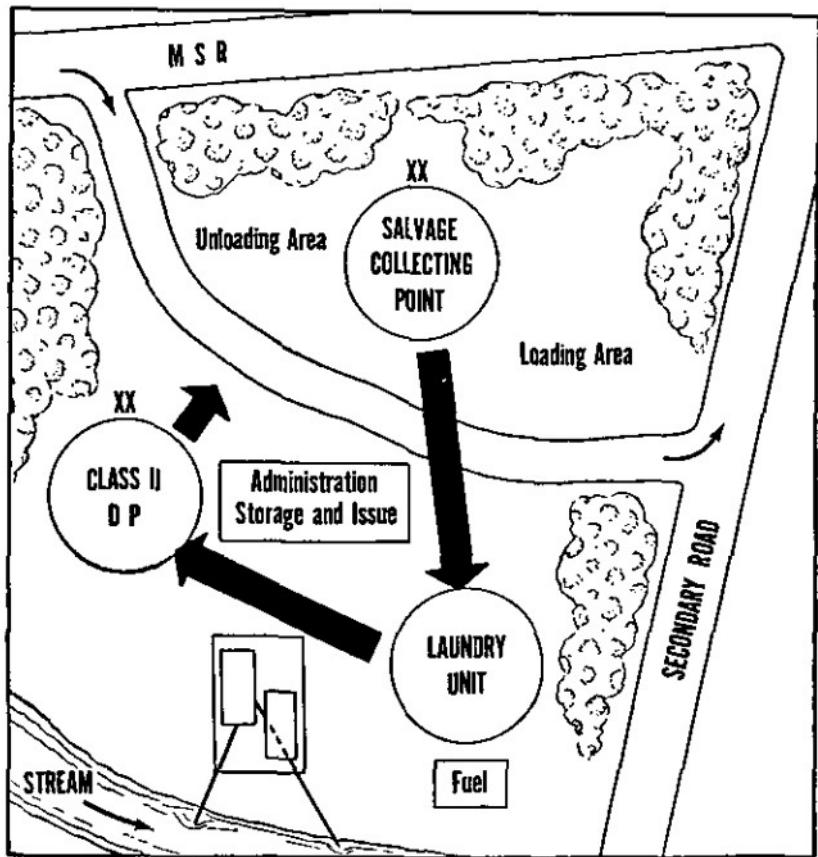


Figure 26. Schematic plan for a field laundry layout operating at a division salvage collecting point.

suspended in a submerged bucket to prevent clogging. The discharge hose is connected to the trailer and run out to the water-disposal point. The laundry unit is then ready for operations.

c. Care must be taken that the water used is as free from impurities as possible. Hardness in water caused by mineral contents reduces the detergent action of the soap, and the minerals from deposits that are difficult to rinse from the fabric. Mineral content in water can also produce boiler scale or cor-

rosion. In areas where hardness of the water presents a difficult problem in the operation of the laundry units, the division quartermaster should obtain advice from the division engineer.

159. RECEIVING

a. Laundry work from separate units should be received in bundles properly tagged with the name of the unit. The date of receipt and a count of items should be recorded by the laundry section for each unit. Since unit work is received and returned according to published schedules, a system of receipts is normally not required.

b. Bulk work done in connection with clothing exchange or salvage operations is received and returned according to the normal operating capacity of the laundry units, as determined by the nature of the work and the washing formula required. Unless otherwise directed, no count will be taken of the number of garments processed. However, an estimate of the number of pounds of processed work will be kept as part of the operating records of the section.

160. MARKING

For the normal field operations of the laundry section, marking is not required. However, when unit work is being processed, care must be taken to keep the work for each unit separated. In changing over from one unit lot to another, marking pins should be used to identify the clothing for a mixed washer-load.

161. CLASSIFYING

Articles to be laundered are classified according to the type of fabric and the character of the dye. Woolens will be separated from cotton goods. Colored goods will be separated from whites. Fatigues or other garments colored with dyes that have a tendency to run (fugitives) are sometimes separated from other colored work. In ordinary field operations, however, the whites are usually sorted into one basket and all colored clothes into another.

162. WASHING

The washing process will normally be based on a 19-minute washing formula composed of two sudsing and three rinsing operations, with sour added to the last rinse. Washing must be done in such a way that the loss in the tensil strength of the fabric is kept at a minimum and the whiteness or color of the fabric is retained. Therefore the control of water temperature, the amount of detergent to be used, the level of water in the washer, and the number of sudsing and rinsing operations are important. Formulas vary with the type of garments being laundered. While some variation may be necessary because of local conditions, the formulas provided in appendix III are standard for use with mobile laundry facilities.

163. DRYING

a. Extraction. After washing is completed, the work is run through the extractor, which removes

about 60 percent of the moisture from the fabric during the normal 5-minute run. The extractor holds only 30 pounds, or about half of a washer-load of work.

b. Tumbling. The final step in drying is the tumbling operation. After extraction, the laundry work is placed in a dry tumbler from 15 to 20 minutes, -depending upon local conditions. When the work is dry, it is removed from the tumbler, placed in baskets, and sent to the receiving and issue tent for proper disposition.

164. RETURN OF FINISHED WORK

a. Finished work for unit bundles should be sorted by item. A second count is made and the total for each item tallied against the count made at the time the work was received. The completed bundles should be tagged with the name of the unit.

b. Finished work which is to be returned to stock as part of the class II reserve will also be sorted by item. In addition, garments should receive an elementary resizing as to small, medium, or large. This will facilitate the reissue of items and assist in maintaining a reserve inventory of stock on hand.

165. MAINTENANCE

The general maintenance of equipment is covered in paragraph 56. Precautions for operating the laundry equipment under unusual conditions are given in appendix III, paragraph 9.

166. OPERATING SHIFTS

The arrangement of shifts and the employment of personnel must be determined by local operating conditions. Under average conditions where the two laundry units are operated at the same point, the men organic to the laundry section are normally sufficient for the operation of two 8-hour shifts per day. The section leader will head one shift, and the assistant section leader will head the other. Each shift will also require the following personnel: fireman and engine operator, laundry machine operators, processor; and checker. The equipment mechanic and the truck drivers may or may not be assigned to a particular shift, depending upon the schedule of operations for which their services are required.

167. RECORDS AND REPORTS

a. Operations. The laundry section will keep a record of the work processed, as the basis for reports to the field service section of the quartermaster's office. The operations report will be prepared and submitted at intervals as directed. It will include a statement of the number of laundry units in operation, total operating hours, and quantity of work processed. The report should also include any remarks pertaining to the proper functioning of the laundry units.

b. Maintenance and Supply. The laundry section will normally keep maintenance and supply records as follows:

- (1) Laundry equipment records will be kept to insure that scheduled maintenance services are regularly performed. DA AGO Form

460 may be used to record weekly, monthly, and semiannual preventive maintenance services. Special reports may be required by higher authorities, depending upon the local situation.

- (2) Supply records should be kept of supplies used and supplies on hand. Operating supplies are obtained by requisition from normal supply channels. Requests are submitted through the designated quartermaster unit supply officer. The amount of supplies required for the washing operation is given in appendix III.

Section IV. GRAVES REGISTRATION

168. DIVISIONAL ORGANIZATION AND SERVICE

a. General. Graves registration deals with problems that require the most exacting and careful attention. The service is highly specialized and the details of its operation are complicated by a wide variety of conditions in the field affecting the collection, identification, evacuation, and burial of the dead. Yet for efficient operation, the service must be governed at all echelons by policies and procedures that will insure the greatest possible uniformity consistent with the range of problems that arise.

b. Echelonment.

- (1) Limited graves registration personnel are organic to the major combat units. In the infantry and airborne divisions, the service company of each infantry regiment includes a regimental graves registration section.

In the armored division, each battalion normally details one officer as graves registration officer in addition to his other duties. His responsibilities will generally include the assignment of personnel and vehicles to effect prompt collection and evacuation of battalion dead. In all divisions, when dead are numerous or their evacuation difficult, each commander assists his subordinate commanders by making personnel available to them to aid in the evacuation procedure.

- (2) At division level, the graves registration service includes the division graves registration supervisor (office of the division quartermaster) and the men organic to the quartermaster graves registration section. Further assistance is normally provided by the platoon of a graves registration company (T/O & E 10-297). This platoon may operate immediately in support of the division but remain under army direction, or it may be attached to the division.

169. QUARTERMASTER RESPONSIBILITY IN RELATION TO OTHER ECHELONS

a. Higher Headquarters. The staff of the army commander will include a graves registration office to advise and assist subordinate elements and to exercise supervision for the army commander over all graves registration activities. Graves registration units will be assigned to army as required to meet the current situation. In addition to graves registration companies, which are normally allocated on the

basis of one for each corps, special cellular units may be organized for search and recovery, central identification laboratory work, and cemetery maintenance.

b. Division General staff. The G1 is the general staff officer responsible for the establishment of division plans and policies for burials, graves registration, and the handling of personal effects (par. 12e). The G4 formulates the policies concerning evacuation, acquisition of and for temporary burial, and source of labor. Both G1 and G4 normally look to the quartermaster for recommendations on all policy matters affecting graves registration activities.

c. Division Special Staff. Graves registration operations may also require coordination with the chaplain, division engineer, and division surgeon for burials; and with unit commanders for the location of the division, regimental, and battalion collecting points, the evacuation of dead, and the transmittal of records and personal effects.

170. RESPONSIBILITY OF COMMAND

Each unit commander is responsible that his dead are evacuated from his unit area. Prompt evacuation is important to sustain morale and to insure the health of the command. To facilitate removal and to aid identification and the accuracy of reports, dead are evacuated systematically—

a. Company commanders have the dead from their units evacuated to accessible locations within their own area. The dead are covered with blankets, raincoats, or shelter halves. Transport en route to battalion or regimental installations may be employed to pick up the dead and evacuate them to the

regimental collecting point. The location of dead which cannot be evacuated in this manner is reported by the company commander to the battalion commander. Separate companies of the division will evacuate their dead directly to the division collecting point, or, when unable to do so, will request assistance from the office of the division quartermaster.

b. The battalion commander insures that all dead of his battalion are evacuated. Dead delivered to the battalion collecting point are promptly evacuated to the regimental collecting point. They are evacuated either on empty transport going to the rear for resupply purposes or by the regimental graves registration section which picks them up from the battalion collecting point. The location of any dead which the battalion is unable to evacuate is reported to regiment.

c. The regimental graves registration section supervises collection of the dead within the regimental area. It evacuates the bodies and personal effects to the division collecting point, or, depending upon the local situation and directives from higher headquarters, directly to army graves registration agencies.

171. GENERAL REQUIREMENTS OF THE DIVISION COLLECTING POINT

The division graves registration collecting point should be established at a location that has been previously coordinated with the locations of the major unit collecting points. Since empty unit transport making resupply runs is frequently used for evacuation of the dead, it is desirable, whenever possible, to

select a location reasonably accessible to the principal supply route leading to the rear. The division collecting point must be well removed from other installation areas and bivouacs and should be at sufficient distance from the road to screen the area of operations from passing traffic.

172. FIELD LAYOUT PLAN

a. Area Required. The shape and size of the available area, its relation to the road net, and the nature of the terrain will dictate in part the plan to be followed in laying out for operations. The plan must include sufficient space for a processing area and the erection of the three tents employed in graves registration operations (fig. 27). The processing area, an open or partially covered area for the reception and initial examination of remains, should be located adjacent to the morgue tent. A space approximately 50 x 100 feet is normally adequate for the processing area.

b. Shelter. The three tents organic to the graves registration section are normally used as the administrative and morgue tents. In cases where it is necessary to establish a division cemetery, one of the tents will be used for processing personal effects. Normally, however, effects are not processed at a division collecting point but are evacuated with the remains. If a suitable vacant building is available, it may be used for administration, but permanent structures should never be used for morgue or effects work. Offensive odors from the remains and effects may penetrate a building and are extremely difficult to remove.

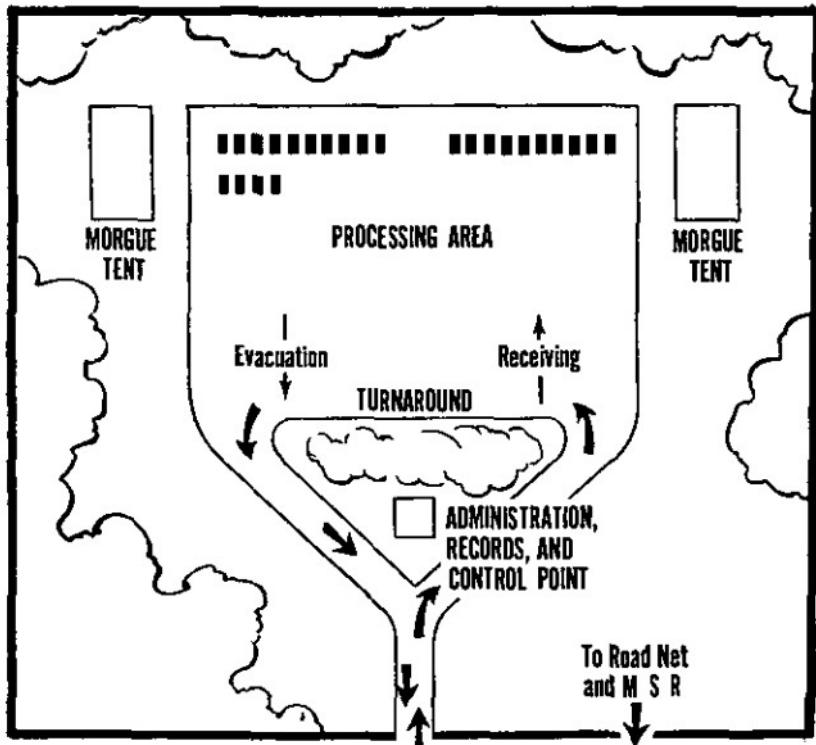


Figure 27. Schematic layout for division graves registration collecting point.

c. Administrative and Control Tent. The small wall tent organically provided is normally used for administration, including the preparation, filing, and maintenance of forms, reports, and records and the supervision of operations at the collecting point. It should be erected at a control point near the flow of incoming traffic, and it may be separated from the location of the processing area.

d. Morgue Tents. The morgue tents, which are the center for the identifying and evacuation of the dead, should be located where they are accessible to all parts of the processing area. Natural vegeta-

tion or an improvised screen at the processing area adjoining the morgue tents is desirable to conceal from public view remains in the open awaiting processing or burial. The sides of the tents should be kept down where exposure to public view is possible. Each morgue tent usually contains two or three litterers used for processing the remains. Other operating supplies such as human remains, pouches, and mattress covers may be kept in the tent.

e. Effects Tent. Where an effects tent is required it should be erected near the morgue tent or processing area. The identification of effects and administrative duties should not be combined under one tent because effects retain their offensive odors until finally processed. Neither should effects be processed in the morgue tent. When this type of processing is required in conjunction with cemetery operations, much detailed, accurate work is involved in accounting for the effects. Personnel handling effects perform their tasks better when their attention is not diverted to morgue procedures. The effects tent shelters personnel engaged in inventorying. Certain operating supplies such as personal effects, bags, and pouches, may be kept in this tent. The tent will be off limits to unauthorized personnel.

f. Processing Area. The processing area must be arranged so that the dead can be laid out in an orderly manner. Space for walks to reach all bodies must be planned. The processing area should be located to facilitate unloading and loading operations, especially when the evacuation of a large number of remains is required.

173. OPERATING EQUIPMENT AND SUPPLIES

a. Shelter. Three tents are provided—two of these are squad tents; the other, a small wall tent. They are normally used as outlined in paragraph 172.

b. Trucks. The $\frac{1}{4}$ -ton and $\frac{3}{4}$ -ton trucks and trailers organically provided are used to transport personnel and organizational equipment and supplies. The $\frac{1}{4}$ -ton truck is normally employed for administrative functions. The $\frac{3}{4}$ -ton trucks and 1-ton trailers are used for the evacuation of the dead.

c. Operating Equipment. Operating equipment includes a stencil-cutting machine, an embossing machine (graphotype), and a fingerprint-taking unit.

d. Operating Supplies. Graves registration supplies are obtained by requisition through normal supply channels. Some items are controlled or may have no authorized allowance and must be requisitioned through class IV or other appropriate channels. Mattress covers and certain other supplies normally expended in graves registration operations are usually not controlled and should be requisitioned on normal requisitions submitted at regular intervals. When noncontrolled items are requested for graves registration purposes, the purpose should be stated on the requisition to insure appropriate action. Ample technical supplies should be requisitioned in advance of actual need and an adequate supply maintained at all times. Requisitions, usually for a 20-day period, are submitted through technical channels to the supplying agency. They are submitted approximately one week before the effective date of the requisition. In emergencies,

requisitions are made at any time the need justifies such action. Emergency requisitions should be clearly marked as such and kept to a minimum.

174. GRAVES REGISTRATION OPERATIONS

Graves registration operations include the search, recovery, identification, evacuation, and burial of the dead; and the preparation of necessary reports and forms and the maintenance of records connected with these operations. With the exception of the receipt, initial identification, and evacuation of the dead, these operations will normally be limited at the divisional level.

a. Search and Recovery. The search for and recovery of the remains of personnel missing in action and the recovery of hasty or isolated burials made under unusual circumstances are normally conducted by search parties organized by higher headquarters. The divisional graves registration section is responsible for forwarding all information received from subordinate units of the division concerning the location, or probable locations, of unrecovered dead. When operating with attached or supporting graves registration units, the section may also assist in gathering and transmitting data on isolated or hasty burials. Normally, however, personnel of the section are not employed in search and recovery operations.

b. Evacuation. Evacuation is the removal of the remains from the place of death to a temporary cemetery for burial. In the combat zone, evacuation has two phases. The first phase begins with the removal of the remains from the place of death and

ends with the transport of the remains to a collecting point operated by graves registration personnel (par. 170). The second phase begins with the receipt of the remains at the collecting point and ends when the remains reaches the cemetery. Procedures to be followed upon receipt by the collecting point are outlined in paragraph 175. In certain instances, such as during landing operations, evacuation is made directly from the place of death to the nearest cemetery.

c. Identification. Identification is a continuing process until positive proof of identity is established. Varying procedures are followed, which may include the many highly specialized techniques used at central identification laboratories and which may continue even after burial of the remains. Normally, however, remains will be received at the collecting point with adequate identification media so that no problem of identification is involved. Identification media and procedures normally followed at the collecting point are summarized in paragraph 179.

d. Burial. Temporary cemeteries will not be established by divisions, except in the absence of accessible cemeteries operated by higher command or in instances of severe and isolated combat where normal evacuation is impossible for such a period that burial becomes mandatory.

175. PROCEDURE AT THE DIVISION COLLECTING POINT

The procedure to be followed when remains or parts of remains are received at the collecting point is as follows:

- a. The remains will be carefully examined for identification if the identification is in doubt.
- b. The emergency medical tag will be prepared if the remains does not have one and medical personnel are available to prepare the form.
- c. An evacuation number will be assigned to unidentified dead. This number identifies unknown dead until the body arrives at the cemetery and further identification procedures are undertaken. The number should be written on all documents and photographs. The number may be cited as E1, E2, and so on.
- d. A register of the remains will be established to include the following information: name, rank, service number, evacuation number, place of death by coordinates, names of persons delivering the remains to the collecting point, time and date the remains were received at the collecting point, and the time and date the remains were evacuated to the cemetery.
- e. A Report of Recovery of Unknown and signed Certificate of Identity will be prepared, if required (par. 181).
- f. The remains will be evacuated to the cemetery.

176. CARING FOR REMAINS

Remains will be kept shrouded at all times except when examination is necessary to determine the identity or to locate effects. Remains will have been shrouded, if practical, before receipts at the collecting point. However, when many remains must be loaded on trucks during an emergency, shrouding is usually impractical. In such cases, shrouds will be provided

at the collecting point whenever possible. A shroud consists of the human remains pouch, mattress cover, blanket, shelter half, or any suitable material, completely covering the remains. Special care must be taken where only a part or parts of the remains are received, so that no possible identifying media are lost. If required and available, a disinfectant spray will be used.

177. CARING FOR MEDICAL TAG

The emergency medical tag will be prepared if a member of the Medical Corps has found the remains before evacuation or has examined the body at the place where the body was found or later at the collecting point or cemetery. The disposition of the medical tag depends upon whether identification tags are present with the remains. When there are two identification tags present, the graves registration personnel at the collecting point will remove the emergency medical tag for delivery in person by graves registration personnel to the cemetery. If there is one identification tag present or no identification tags, the emergency medical tag will be removed and a written note will be put in a pocket of the deceased informing the processing crew at the cemetery of the fact. On the note will appear the name, rank, service number and any other necessary information needed to connect the note with the proper medical tag. The medical tag will then be turned over to cemetery personnel when the body arrives at the cemetery. If the medical tag is handled with care, the written information on the tag will

not be obscured by blood, material from decayed internal organs, or body fluids.

178. CARING FOR PERSONAL EFFECTS

a. Personal effects will not be removed. Except in special circumstances the effects stay on the remains until it reaches the cemetery. This requirement should be rigidly followed, with the following allowances:

- (1) If certain effects on the remains, such as maps or plans, are of such tactical importance that they must be removed, this will be done under the direct supervision of the officer in charge. A notation of the fact on a slip of paper will be made for purposes of information and the paper placed in a pocket of the deceased.
- (2) If the condition of the remains requires the removal of effects, they will be placed in a personal effects bag and attached to the remains at the ankle, middle, arm, or neck.
- (3) If initial identification of the deceased must be established or corroborated at the collecting point, effects may be removed temporarily during the processing at the morgue tent but must be restored to the person of the deceased exactly as removed.

b. Remains awaiting evacuation will be guarded at all times to prevent pilfering. Where identification is incomplete or not known, all government-issue equipment found with the body or transmitted to the collecting point will be forwarded with the body. Normally, where identification is established,

government-issue equipment will not be forwarded to the cemetery with the body but will be disposed of as directed by higher authority.

179. INITIAL IDENTIFICATION PROCEDURES

a. General

- (1) Initial identification is performed at the place where the dead are found. For unidentified dead received at the collecting point, initial identification procedures are continued and usually completed. Final classification into identified and unknown is accomplished at the cemetery.
- (2) Additional information and evidence is sometimes needed to establish identity of the deceased. Personnel of the collecting point must make persistent efforts in searching for identification media. The graves registration officer of the unit to which the deceased was assigned or attached will normally be requested to furnish additional information.

b. Basic Requirements. The following points are most vital in identification procedures:

- (1) Thoroughness and utmost resourcefulness in examining all possible sources of identification.
- (2) Care in preserving all identifying media.
- (3) Thoroughness and accuracy in the preparation of forms and reports in connection with identification.
- (4) Use of personal identification methods when feasible. An individual acquainted with

the deceased should verify the identification, if possible.

c. Identifying Media.

- (1) Army equipment and records that are often used to establish identification tags, chevrons, ribbons, weapons, web belts, helmet liners, shoes, clothing, theater identification cards, pay books or pay data cards, and motor vehicle operators' permits.
- (2) Personal effects include wallets, photographs, letters, diaries, notebooks, engraved jewelry, and similar items.
- (3) Additional means of identification may be provided by fingerprints, dental charts, dentures, photography, description or physical characteristics, clothing size and marks, place of death or former place of burial or recovery, recognition statements, equipment numbers, names of other deceased recovered with the unknown, and the emergency medical tag.

d. Collecting Point Procedures.

- (1) A Report of Recovery of Unknown (par. 181) will be completely filled out by graves registration personnel when unidentified remains are received at the collecting point.
- (2) After the Report of Recovery of Unknown is completed, personnel operating the collecting point start procedures to establish identification by communicating with headquarters of the units that were in the area where the remains were recovered. Efforts are directed toward finding the possible or-

ganization of the unknown. A comparison is made of the Report of Recovery of Unknown and copies of casualty reports and morning reports submitted by units in the area. A close check may result in the determination of the unit of the deceased.

- (3) When the unit is found, members of the unit may be interviewed and invited to view the remains. Certain items of personal effects found on the remains may be recognized and will furnish the clue to identification.
- (4) Next, if the deceased is recognized by a member of his unit, a signed statement will be obtained from the individual making the identification (par. 181). The person signing the statement of identification should be indicated by name, grade, service number, and unit designation.
- (5) One copy each of the Report of Recovery of Unknown and the signed identification statement will be retained at the collecting point and the remaining copies of each form placed in the clothing of the deceased or the personal effects bag accompanying the remains.
- (6) Conflicting or inconclusive evidence cases which cannot be identified by the foregoing means should be forwarded for further identification processing at the cemetery.

180. TRANSPORT TO THE CEMETERY

a. Method.

- (1) In the combat zone remains are usually evacuated from the collecting point by truck. The $\frac{3}{4}$ -ton truck with 1-ton trailer and the $2\frac{1}{2}$ -ton truck are normally employed. A $\frac{3}{4}$ -ton truck can transport from 1 to 6 remains a trip; in emergencies, 9 remains can be loaded. The 1-ton trailer can carry from 1 to 9 bodies, with an emergency load limit of 12. The $2\frac{1}{2}$ -ton cargo truck can carry from 15 to 25 remains.
- (2) Remains will not be exposed to view while being evacuated to the cemetery. They should be properly shrouded and placed in covered vehicles. The canvas fly of the truck or trailer must be kept closed. Evacuation routes will be planned around towns or cities. Main supply routes should be avoided. Every effort will be made to transport the dead in a manner and by a route that will attract as little attention as possible from soldiers and civilians.
- (3) Litters used to pick up and carry the dead are not put into vehicles but will be retained at the collecting point. Two men, the driver and a guard, will accompany the remains to the cemetery. Valuable personal effects and money may be on the bodies and double custody is necessary to prevent the possibility of pilferage.

b. Disposing of Reports.

- (1) The emergency medical tag will be removed to protect it from blood stains and body fluids (par. 177).
- (2) All papers pertaining to the case will be carried by graves registration personnel accompanying the remains to the cemetery.

c. Delivery of Remains. Upon arrival at the cemetery, the remains and all forms and reports relating to the case will be delivered to the cemetery administrative tent. Any further instructions, such as where to place the remains, will be given by the cemetery personnel.

181. RECORDS AND REPORTS

The records and reports kept by the division graves registration section will vary with the extent of the operations performed. In addition to the collecting point register (par. 175d), individual records and reports maintained by the graves registration section include Reports of Recovery of Unknown and Certificates of Identity.

CHAPTER 8

TRANSPORTATION

Section I. DIVISION TRAFFIC CONTROL

182. NEED FOR TRAFFIC CONTROL

The movement of tactical units and vehicles engaged in supply and evacuation involve the use of roadways and terminal facilities such as supply points, command posts, and assembly areas, under conditions subject to rapid and unpredictable changes. Traffic density, limitations of the available road net, vehicle characteristics, and the possibility of enemy air or armored attack are factors which contribute to the need for the assignment of priorities to movements in accordance with their relative importance. The division commander, through the G4 and G3, will specify routes, schedule movements, limit traffic densities, and provide field supervision and maintenance to insure that all movements are executed in accordance with the requirements of the situation.

183. ORGANIZATION

a. Supervision and coordination of agencies concerned with traffic reconnaissance, planning, and execution are duties of the division G4, a portion of whose staff section is organized into a traffic head-

quarters. Traffic headquarters operates under the assistant G4, transportation. Among other duties, the assistant G4, transportation, is responsible for the receipt, correlation, and dissemination of traffic information and for the preparation of traffic circulation and control plans. He will coordinate division transportation requirements with the special staff, of which the division quartermaster is a member (par. 15b).

b. Tactical movement is controlled by the operations officer (G3) with the assistance of the assistant G4, transportation. Requirements for tactical movement will be incorporated in the circulation and traffic control plans.

184. CIRCULATION AND TRAFFIC CONTROL PLANS

a. Circulation Plan. Movements are routed over an area road net in accordance with tactical and administrative traffic requirements and the capacities of roads and bridges. The plan provides for the expeditious movement of supply and evacuation vehicles without interference with essential tactical traffic. Routes and the direction of movement are prescribed, based on the location of terminals, the restrictions imposed by higher headquarters, and the physical characteristics of the road net. Routes may be restricted in direction or scheduled in time and space; for example, supply traffic may be confined to hours of darkness, or a route may be reserved for specific movements. The circulation plan, issued as an annex to the administrative order, is shown either on a circulation map or overlay. The circulation map may also include traffic control information.

b. *Traffic Control Plan.* Traffic control provides for the enforcement of the circulation plan, the elimination or reduction of traffic conflicts, the promotion of free and orderly movement of traffic, and the provision of traffic information. Control is exercised only to the extent necessary to expedite essential military traffic, leaving all practicable discretion to subordinate echelons.

Section II. EMPLOYMENT OF QUARTERMASTER VEHICLES

185. AVAILABILITY OF TRANSPORT

Divisional quartermaster units are organically provided with vehicles and personnel for the transportation required in supply and service operations. In addition to the vehicles assigned to and operated by the various sections of the supply and field service platoons, quartermaster units also include separate truck platoons which may be utilized as the current situation requires.

186. CONTROL

a. *General.* At each echelon of command, operation is a function of the service to which the means of transportation is assigned. March organization, techniques, and discipline for the internal control of quartermaster columns and convoys are the responsibility of the commanding quartermaster officer in accordance with standing operating procedure, traffic orders, and regulations prescribed by higher headquarters.

b. Office of the Division Quartermaster. The executive section of the quartermaster's office coordinates and supervises the employment of all quartermaster vehicles, organic or attached. Within the restrictions imposed by the division commander through traffic headquarters and as directed by the division quartermaster, the executive section will prescribe loads for quartermaster vehicles, validate transportation requests, and correlate information on the location, availability, and condition of vehicles. In emergencies vehicle loads may be consolidated or dumped and additional transportation requested from higher headquarters. For all normal transportation procedures that can be standardized, however, the administration and control of transportation is simplified and uniformity of performance promoted by the publication of standing operating procedures for the employment of quartermaster vehicles.

c. Officers of the Quartermaster Command. The immediate control and supervision of vehicles is directed by the commanders and leaders of the companies, platoons, and sections of the quartermaster organization to which the vehicles are assigned. They are responsible for the enforcement of all provisions of the organization SOP concerning maintenance, security, operation, and reports required by the quartermaster's office. Such functions (especially those requirements for maintenance) may be coordinate by a motor officer, when designated. A motor officer is organic to quartermaster battalion headquarters, armored division. In the infantry and airborne quartermaster companies, the division quar-

termaster may designate an officer of the command to discharge similar functions.

187. UTILIZATION

a. Service Operations. The use of vehicles organic to a service section, such as the bath, laundry, or graves registration section of a divisional quartermaster unit, is normally limited to the operations of that section. Except under unusual conditions, the vehicles thus organically provided will be sufficient for the operational needs of the section. The size and general employment of these trucks are covered in chapter 7. When required, additional transportation will be drawn from the truck platoons.

b. Supply Operations. The normal operations of the supply sections, however, depend directly upon transportation provided by the truck platoons. Hauling supplies constitutes the major use of quartermaster transportation, since all classes of supply operations are normally based upon divisional transportation of supplies from army depots or supply points. As detailed in chapters 4, 5, and 6, prescribed duties include drawing in bulk, transporting supplies to divisional distributing points for breakdown and issue, and the evacuation of salvage. Authorized quartermaster reserves for the division are normally carried by the vehicles organic to the various supply sections.

c. Other Operations. Organic quartermaster transportation is limited and its full utilization will normally be required for the support of the quartermaster mission. Quartermaster vehicles may be assigned other missions such as transporting person-

nel in an emergency. However, such action should be taken only by the division commander, since performance of the quartermaster supply mission will normally cease during such diversion of these vehicles.

Section III. TRANSPORTATION ELEMENTS OF THE DIVISION QUARTERMASTER SERVICE

188. TRUCK PLATOON

a. Organization. Each truck platoon comprises a platoon headquarters and two truck sections.

b. Operation. The truck platoon is the operating element that provides transportation for quartermaster service and supply. Its activities include the maintenance of organic vehicles and their operation as directed. The platoon is equipped with the following types of vehicles: $\frac{1}{4}$ -ton truck and trailer, $2\frac{1}{2}$ -ton cargo truck, and 1-ton cargo trailer.

c. Relation to ODQM. The operations of the truck platoon are under the supervision of the executive section of the quartermaster's office.

189. PLATOON HEADQUARTERS

Platoon headquarters is composed of one commissioned officer, who is the platoon leader, and two enlisted men.

a. Platoon Leader. The platoon leader is responsible under the company commander for directing the operations of the platoon and for training platoon personnel both in the technical phases of motor vehicle maintenance and operation and in measures for the security and defense of the platoon. He must

be thoroughly familiar with standing operating procedures and all regulations governing the employment of vehicles and the control of traffic. Through inspections and personal supervision, he coordinates with the motor officer in the maintenance and performance of all vehicles of the platoon, to insure maximum efficiency of operation at all times. In coordination with the dispatcher, the platoon leader is responsible for the assignment of trucks and drivers in an equitable distribution of the work load. He is also responsible for providing current information on the availability and status of platoon vehicles. When all or a major part of the platoon operates as a convoy, the platoon leader will normally be the convoy commander. He may be assigned such other duties by the company commander as the situation requires.

b. Platoon Sergeant. The platoon sergeant is the noncommissioned assistant to the platoon leader and is also qualified as a truck driver. Through the section leaders, he coordinates the supply, maintenance, and operation of platoon vehicles. Assisted by the mechanic and the truck drivers, he prepares maintenance and operation reports under the supervision of the platoon leader and as directed by standing operating procedure and company orders. As a member of the cadre, he is responsible for assigned duties in the training of platoon personnel, and for security measures taken to protect the platoon.

c. Wheel Vehicle Mechanic. The mechanic inspects and performs organizational maintenance service and repairs on the vehicles organic to the truck platoon. In the quartermaster battalion,

armored division, he is also qualified as a light truck driver (truck platoons of the supply company).

190. TRUCK SECTION

The truck section is composed of the following men, who operate the transportation facilities of the section:

a. Section Leader and Squad Leaders. The section leader is the noncommissioned officer in charge of operations of the section. He is also a qualified truck driver. He is assisted by the squad leaders, each of whom heads a squad of drivers.

b. Truck Drivers and Assistant Drivers. The truck drivers and assistant drivers are qualified operators of the 2½-ton trucks and 1-ton trailers organic to the section, and are responsible for their first echelon maintenance. Assignments are rotated among the drivers according to the work load and the length of haul.

PART TWO

INFANTRY, AIRBORNE, AND ARMORED QUARTERMASTER ORGANIZATION AND OPERATION

CHAPTER 9

QUARTERMASTER COMPANY IN THE INFANTRY DIVISION

Section I. GENERAL

191. INFANTRY DIVISION

The infantry division is the basis of organization of the ground field forces. It is the smallest unit composed of all the essential ground arms and services that can conduct, by its own means, ground operations of general importance. The infantry division can perform all types of ground operations effectively; it can strike or penetrate, maneuver readily over any type of terrain, and absorb reinforcing units easily. It is capable of acting alone or as part of a larger unit. The combat value of the infantry division derives from its ability to combine the action of the various arms and services in sustained combat. An integral part of the infantry division is the quartermaster company.

192. QUARTERMASTER COMPANY

a. Mission. The mission of the quartermaster company is to support the infantry division by providing all classes of quartermaster supply, bath and laundry facilities, and graves registration supervision.

b. Assignment. The quartermaster company is organic to the infantry division (T/O & E 7N).

c. Capabilities. The company is capable of providing class I, III, and quartermaster class II and IV supplies, bathing facilities, and limited laundry and graves registration service to all elements of the division. Complete laundry and graves registration service requires the support of additional elements not organic to the division.

d. Organization. The quartermaster company, infantry division (T/O & E 10-17N) comprises the office of the division quartermaster, company headquarters, supply platoon, field service platoon, and three truck platoons (fig. 28).

Section II. INFANTRY QUARTERMASTER LOGISTICS

193. GENERAL

The supply, service, and transportation operations detailed in part one of this manual are normal procedures for quartermaster support of the infantry division. However, they are best understood and applied to infantry operations when considered in relation to the service organization of the division as a whole.

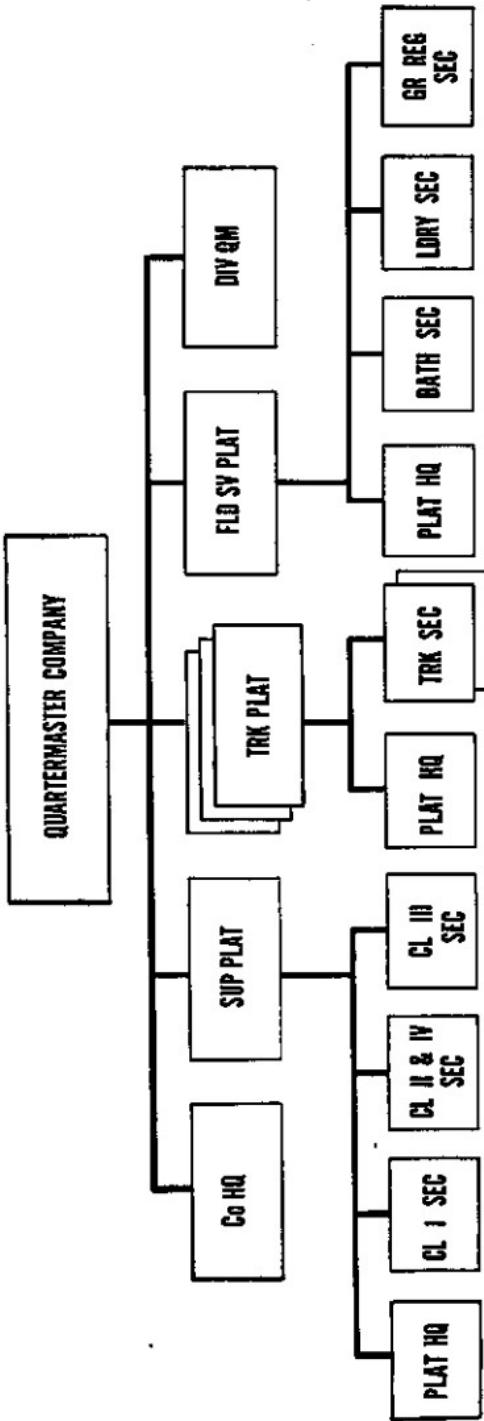


Figure 28. Quartermaster company, infantry or airborne division.

194. INFANTRY DIVISION TRAINS

a. There is no division train commander nor is there a formal organization for division trains in the infantry division. Certain administrative duties in connection with division trains and the security of the division trains area usually are detailed in addition to other duties.

b. It is essential that the fighting area of the division zone of action be cleared of transportation, service personnel, and installations not immediately necessary to combat. Normally, combat and field trains are located closely in rear of their parent organizations and, for administrative movement or in slow-moving actions, may be combined. However, the field trains may be disposed farther to the rear when the terrain or enemy situation dictates or for administrative expediency. Factors governing the selection of the location of the division trains area include the relationship to the area required for combat maneuver, including suitable road net; the proximity of friendly troops and reserves; availability of supplies and services to the combat troops; location of terrain affording defilade, cover, and concealment; and suitable routes forward and to the flanks and rear.

c. Division service installations are located to perform best their respective missions and are not located necessarily in the division trains area.

d. The unit trains of infantry and field artillery elements do not have sufficient vehicles to be self-supporting except when supplies are available close to the division zone. Armored elements of the in-

fantry division have organic truck support similar to that in the armored division. All elements of the division are capable of transporting their loads of ammunition for limited operations.

e. The divisional quartermaster company contains trucks which are used to bring up rations and class II and IV supplies. They also maintain a supply of gasoline to assist those elements of the division which do not have organic fuel and lubricant trucks. The ammunition trains of all combat elements need help from the quartermaster trucks whenever expenditures are heavy.

f. By a combination of unit trains and division trains, the infantry can support itself at an average distance of about 35-40 miles from army supply points.

195. CLASS I RESERVE

a. Normally, a 2 day's ration reserve is adequate for an infantry division. The most effective means of carrying this reserve is to divide it so that unit kitchens carry 1 day's rations of the type currently being consumed, the remaining supplies being retained and carried by the division quartermaster as part of the unit load of the quartermaster company.

b. Since an emergency supply of rations when needed should be as close to the troops as possible, the ration reserve carried with unit kitchens may best be composed of one or more of the combat-type rations. The 1 day's ration held by the division quartermaster should be type "B." This ration is most needed when the division moves from the line

to a rest area, after a period during which the infantry has been consuming combat-type rations. Such moves normally are made by combat teams, and 1 day's "B" rations will last 2 days or more to subsist the infantry during the usual 48 hours time lag for the ration return.

CHAPTER 10

QUARTERMASTER COMPANY IN THE AIRBORNE DIVISION

Section I. GENERAL

196. AIRBORNE DIVISION

The airborne division is the basic large unit of the combined arms for use in airborne operations. The specific organization and equipment of the airborne division is essentially that of an infantry division with less heavy equipment and a lower ratio of supporting units. Although organized, equipped, and trained primarily for airborne assault, the division is capable of conducting both airborne and normal ground operations. An integral part of the airborne division is the quartermaster company.

197. QUARTERMASTER COMPANY

a. Mission. The mission of the quartermaster company is to support the airborne division by providing all classes of quartermaster supply, bathing and laundry facilities, and graves registration supervision.

b. Assignment. The quartermaster company is organic to the airborne division (T/O & E 57).

c. Capabilities.

- (1) *Supply.* The company is capable of providing class I, III, and quartermaster class II and IV supplies to all elements of the division, within the limits of supply responsibility as described in paragraphs 200b, 201, and 202.
- (2) *Service.* The company provides bathing facilities and limited laundry and graves registration service. Complete laundry and graves registration service requires the support of additional elements not organic to the division.

d. Special Training. In ground operations, the airborne quartermaster company follows the same procedures normally employed for the supply and service support of infantry troops. For air operations, quartermaster personnel are trained as parachutists and air-landed troops, and must be familiar with loading and lashing procedures for the air transportation of organic equipment and with the recovery of quartermaster supplies and organization of quartermaster service in the airhead.

e. Relation to the Quartermaster Parachute Maintenance Company. The quartermaster parachute maintenance company is under the supervision and control of the division quartermaster as commander of the division quartermaster service. The operations of the company will be coordinated by the division parachute officer, who is also an assistant to the quartermaster. The parachute maintenance company is responsible for the procurement, maintenance, storage, and issue of parachutes and other quartermaster air equipment (such as aerial delivery

containers) to all elements of the division that require these supplies. The company also provides the technical service of riggers, who supervise the rigging of parachutes for personnel and aerial delivery containers. They also supervise enplaning of equipment loads that will be dropped by parachute.

198. ORGANIZATION

The quartermaster company, airborne division is organized under the same table of organization (T/O & E 10-17N) as when the company is assigned to the infantry division.

199. ECHELONMENT FOR AIRBORNE OPERATIONS

a. General. The echelonment of the company will depend upon whether the division is alerted for the tactical operation as an airborne assault division or as a follow-up division. It will further depend upon the scale of the operation and the availability and assignment of aircraft.

b. Airborne Assault.

(1) *Assault echelon.*

(a) Subordinate units of assault airborne divisions recover all supplies which accompanied the unit other than those carried by individuals and combat loaded vehicles, and establish battalion and regimental supply points.

(b) The quartermaster company, assisted by elements of other service units recovers all accompanying supplies transported under division control and establishes division supply points. Normally, these

are limited to Classes I, III, and V supply points, under control of the division quartermaster and ordnance officers. These supply points are established in the vicinity of the landing areas on which the quartermaster and ordnance units land. Approximately one half of the quartermaster company engages in the assault. Elements of the follow-up echelon of the quartermaster company are phased in as rapidly as airlift permits in order that combat elements may be relieved of logistical duties and displace forward to engage the enemy—their primary function.

- (c) The scale of the operation and the availability of aircraft will, in the final analysis, determine the total number of quartermaster personnel and vehicles which will be phased into the airhead during the assault and follow-up phases. The graves registration section of the company will normally land with the assault echelon.
- (2) *Follow-up echelon.* The follow-up echelon may move by air, land or sea. It includes all operating personnel not included in the assault echelon.
- (3) *Rear echelon.* The rear echelon remains at the rear base under the supervision of the division rear echelon. It is composed of administrative personnel not required in the combat operation. Duties of rear echelon personnel include guarding of equip-

ment left at the rear base and maintenance of personnel records.

All quartermaster service equipment is air-transportable; but bath and laundry units, under the usual priorities for aircraft allotment, may, in air operations, be made available only after completion of the sea or land tail link-up. The provision of bath and laundry service is normally not feasible during the earlier phases of assault movement.

c. Air Transport. A follow-up division will usually be air-transported into secured landing areas or an established airhead. Except for those personnel assigned to the rear echelon for administrative duties, the entire company will move with the combat echelon of an air transport movement.

Section II. PREPARATION PRIOR TO MARSHALING

200. PLANNING AND PREPARATION

The airborne quartermaster is commander of all division quartermaster troops, organic or attached. He is also a member of the division commander's special staff. The planning and preparation necessary to accomplish the quartermaster mission in any air movement are related to this dual responsibility.

a. Quartermaster Company Plans and Preparation. Normally, the company commander will assist in preparing such plans as are necessary for the administrative control of the company.

(1) From information on the general nature and plan of the operation, as contained in warning directives, plans are initiated for the echeloning, air movement, and supply

of company personnel, and for the movement of organic equipment.

- (a) Planning and preparation for the supply of the company will include showdown inspections; the preparation of unit requisitions to cover shortages in authorized allowances; and the drawing, issue, and packing (when applicable) of accompanying supplies to be carried in the company's move to the marshaling area. For security reasons, the issue and packing of certain special items to be included in accompanying supplies may be completed after the company is sealed in the marshaling area.
 - (b) Planning for the echelonment and air movement of the company will include estimates of the number of troops and the amounts and kinds of organic equipment required to accomplish the quartermaster mission in all phases of the operation. Such estimates may subsequently be revised in conformity with the aircraft allotted to the movement of quartermaster troops and equipment, as prescribed in the division air movement table (airborne assault) or the air movement plan (air-transported follow-up units). Applicable flight forms will then be prepared for the transportation assigned.
- (2) After the division plan is fixed, a more detailed quartermaster support plan will be prepared covering the employment of the quartermaster company. The quartermas-

ter support plan will be based on the assembly area, initial ground mission, and area of operations assigned to the company. Additional planning required for rehearsals, movement to the marshaling area, and for unit briefing and control after marshaling, will be prepared in accordance with division administrative plans and orders.

b. Division Quartermaster Plans and Preparation.

As a special staff officer, the quartermaster's responsibility in the planning and operation of supply extends to all elements of the division. The extent of this responsibility in airborne operations will be determined largely by the scale of the operation which the quartermaster plan will support. In an airborne operation involving the movement of a corps or army, the general logistical plan will be prepared by higher headquarters. In more limited operations, the quartermaster through liaison with G4 may assist in preparing estimates of division requirements for all echelons of supply.

- (1) Assault quartermaster supply is discussed in paragraphs 201-202.
- (2) Responsibility for follow-up maintenance and build-up supply will be limited to logistical estimates and the preparation of consolidated requisitions to cover division needs. Corps or army should arrange for the actual loading and transport of these echelons of supply. Airborne divisions and units of smaller size should not be responsible for the transport of other than assault supplies.

201. QUARTERMASTER RESPONSIBILITY FOR ASSAULT SUPPLIES

The quartermaster company is responsible for the procurement and distribution of assault supplies to other elements of the division, for the unit load of the company, and for any additional supplies carried as a quartermaster reserve.

a. Assault supplies issued to subordinate units prior to marshaling are provided through normal supply channels, as described in paragraph 204.

b. The unit load of the company in an airborne operation will be prescribed by the logistical plan for the division. The unit load is based on the strength and composition of the unit, the scale of equipment to accompany the airborne quartermaster force, and the quantity of initial supplies required by the echelonnement of personnel. Assault supplies will be carried on individuals, packed for delivery in aerial containers, and loaded in unit vehicles, as the current situation may require. The quartermaster company is responsible only for the loading and lashing of its own assault supplies; it does not perform this service for other elements of the division.

c. Additional assault supplies carried as a quartermaster reserve will normally be limited in airborne operations, since provision for additional supplies of all classes will be made in subsequent echelons of supply. Reserve supplies may move with a follow-up echelon by land or sea. Follow-up forces normally carry assault supplies in sufficient quantities to insure operations until maintenance supplies are available. When the company is air-transported to arrive in an

airhead after air landing of supplies has started, it need carry only its prescribed load.

202. QUARTERMASTER SUPPLY

a. Class I. Assault type rations will be required for assault airborne forces. Usually 3 days' supply is carried by the assault forces. Combat type rations should be carried by airborne forces other than assault. Usually 1 days' supply of individual rations is provided to be carried by the individual and an additional 2 days' supply provided to accompany the unit.

b. Class II. Replacement and maintenance parts for essential items of quartermaster equipment should accompany the movement of such equipment; 15 to 30 days' estimated requirements for maintenance are normal. Limited amounts of class II items will also be made available in subsequent echelons of supply.

c. Class III. All vehicles should be enplaned with gasoline tanks filled to 90 percent of capacity and with crankcases full of oil. Additional filled cans of gasoline, motor oil, and lubricants should be carried by each vehicle. Supply of gasoline should be in small containers unless facilities in the airhead permit the use of larger drums.

d. Class IV. Since supplies brought into the airhead will be limited because of weight, resources within the airhead should be exploited to their fullest extent. Airborne operations normally necessitate the use of additional special equipment, and changes to some standard equipment in the basic load of the company. Some vehicles should be equipped with

cargo-lifting devices to facilitate initial unloading of aircraft. Pallets and other materials-handling equipment may expedite the handling of cargo in later supply phases.

e. *Water.* Although water supply is not a quartermaster responsibility, organic water containers and canteens should be carried filled for use both en route and for consumption in the airhead. Water purification tablets are issued along with items of class I supply.

203. SPECIAL OPERATING SUPPLY FOR THE COMPANY

a. Ammunition will be carried to the marshaling area under unit control and will be issued in accordance with division SOP's. Company officers and noncommissioned officers should exercise strict supervision over all personnel to prevent carelessness with firearms and explosives.

b. Individual maps, photographs, first-aid kits, parachutes, and escape kits will be issued after the move to the marshaling area. Cargo canopies will be issued and secured to bundles at the time of final inspection of bundles.

204. SUPPLY PROCEDURES

a. Prior to Marshaling.

- (1) Normal supply procedures, as described in part one of this manual, are applicable to the supply operations of the airborne quartermaster company prior to marshaling. Responsibility for the actual distribution of

supplies to other elements of the division is limited to such accompanying supplies.

- (2) Requisitions submitted by subordinate units are processed by the office of the division quartermaster. Supplies are drawn in bulk and distributed from division supply points to all elements of the division. When issue has been completed, each unit is then responsible for its own prescribed load, including organic distribution to its personnel, the packing of aerial delivery containers and loading of unit vehicles, and the movement to marshaling areas and subsequent loading of aircraft allotted for the transport of the unit.

b. After Movement To Marshaling Areas.

- (1) The communications zone is responsible for operating and maintaining marshaling camps, including the provision of supplies consumed during the marshaling period. Supply personnel of the quartermaster company do not operate the supply facilities within the marshaling area. The commander of the marshaling area is responsible for the processing of emergency requisitions covering the shortages or damaged equipment discovered through final inspections.
- (2) Individual clothing and equipment not needed in the airhead are packed in suitable containers to be disposed of as directed by the division commander.

205. INTELLIGENCE REQUIREMENTS

Special intelligence necessary to quartermaster planning and to operations in the airhead may include the following:

- a.* Nature and characteristics of the proposed airhead, including the road net, storage, and other facilities.
- b.* Probable duration of follow-up supply phase.
- c.* Supplies available for exploitation in the airhead. Full utilization should be made of captured or abandoned enemy matériel.
- d.* Climate, season of the year, and probable prevailing weather conditions.
- e.* Location and adequacy of the water supply for the operation of quartermaster bath and laundry units, when such services can be made available.
- f.* Projected location for the establishment of army cemeteries. When deceased personnel cannot be evacuated to cemeteries operated by higher echelons, the quartermaster will require information for the initial reconnaissance of temporary burial sites or for the site of a division cemetery.

Section III. PREPARATION DURING MARSHALING

206. LAST MINUTE SUPPLY AND EQUIPMENT

As in the case of other divisional units, last minute supply and equipment of the quartermaster company are accomplished by the preparation of emergency requisitions (par. 204b). The company is not responsible for the last minute supply and equipment of other units. This function is performed by a

quartermaster detachment operating under the control of the commander of the marshaling area.

207. SERVICE

Quartermaster services received by the company, in common with other divisional units, are provided by personnel of the marshaling camp. The company provides no quartermaster services to other units during marshaling.

Section IV. LANDING AND REORGANIZATION

208. LANDING AND REORGANIZATION OF PERSONNEL AND MATERIEL

a. Landing and Reorganization When Airborne.

(1) *Landing.* The portion of the quartermaster company which participates in the airborne assault lands by parachute, assault aircraft, or a combination thereof.

(2) *Reorganization.* Upon arrival in the air-head, personnel assemble at predetermined locations; groups report arrival to company headquarters and proceed to their designated area for performance of the assigned mission. Designated personnel will remain on the drop or landing zones to complete the removal of supplies.

b. Landing and Reorganization When Air-transported. When air-transported, the company normally lands with the combat echelon. Personnel are responsible for the unloading of accompanying supplies, although heavy dismantled equipment may

temporarily be left in the deplaning area until it can be assembled and moved forward. Reorganization of personnel at assembly areas proceeds in a manner similar to that employed in airborne reorganization.

c. Initial Reconnaissance.

- (1) The combat teams that compose an assault echelon perform initial reconnaissance for unit supply points and are responsible for clearing the drop zone. Areas adjacent to drop and landing zones will normally be subdivided among the various combat units. Regimental and battalion supplies are moved from the drop zone to their respective unit areas. There will normally be no division supply points of quartermaster matériel in this phase of supply operations (par. 209).
- (2) When the nature of the airborne operation requires the presence of quartermaster personnel in the assault echelon, the division quartermaster will normally be limited to a skeleton detail of officers and the supply and graves registration personnel that land with the assault echelon. Immediately upon landing, these troops may be used as infantry. When the tactical situation is good, however, the quartermaster control point is set up, and reconnaissance is commenced for installation sites.
- (3) An urgently needed site for which reconnaissance must be made is that for a division cemetery, unless the scale of operations and

conditions within the airhead permit the immediate assumption of this responsibility by higher headquarters. Ordinarily, divisional cemeteries are inadvisable when a division is an element of a contiguous force. In many airborne operations, however, evacuation to cemeteries controlled by higher headquarters may be initially impossible.

209. SUPPLY PHASES

a. Assault Supply Phase.

- (1) Subordinate units of assault airborne divisions recover all supplies which accompanied the unit, other than those carried by individuals and combat-loaded vehicles, and establish battalion and regimental supply points. The establishment and operation of division distributing points are in turn, directly dependent upon the presence of transportation for hauling supplies to unit areas. Until adequate transportation is available, unit supplies will be spot dropped at the supply points established in the various unit areas.
- (2) When accompanying supplies are transported under divisional control, quartermaster personnel are required to establish division supply points. Normally, these are limited to class I and class III supply points, which are established in the vicinity of the landing area on which the quartermaster company lands and are incorporated into the division maintenance or service

area. Small stocks of class II supplies may also be carried and maintained by the company.

b. Follow-up Supply Phase.

- (1) In the follow-up supply phase, supplies are normally delivered to assault airborne divisions at centrally located landing areas. These areas are usually the ones on which the division service units landed. The division quartermaster normally supervises the receipt, recovery, and movement of these supplies to established supply points. He has available personnel of the quartermaster company, augmented by personnel from the ordnance company. Through coordination with G4, additional labor and transportation may be drawn from other divisional units. Supplies such as ammunition and medical class II items are separated from quartermaster supplies and handled through appropriate supply channels. Normal division supply point distribution is effected thereafter.
- (2) When the tactical situation dictates delivery of follow-up supplies to isolated subordinate units of the assault airborne division, the units recover the supplies.

c. Maintenance and Build-up Supply Phase. In this supply phase, division supplies are procured through normal supply channels from army installations, or from corps installations when corps is acting independently. The senior quartermaster headquarters in the airhead is responsible for the

receipt, classification, storage, and distribution of maintenance and build-up supplies. Accompanying supplies landed with the follow-up echelons of units during this phase are unloaded from aircraft under the supervision of the aerial port operating on the air field and moved directly to unit areas.

210. SUPPLY IN THE AIRHEAD

a. Assault Phase. Only supplies provided in the assault and follow-up supply phases are available to assault airborne units. Accompanying supplies are organically distributed from unit supply points. Unit air supplies are made available to subordinate units from division supply points located in the division service area. No corps or army supply points are in operation.

b. Consolidation Phase. During this phase, army establishes supply points within a centrally located maintenance area.

c. Exploitation Phase. Supply operations are maintained through normal supply channels.

CHAPTER 11

QUARTERMASTER BATTALION IN THE ARMORED DIVISION

Section I. GENERAL

211. THE ARMORED DIVISION

The armored division is a highly mobile force possessing great striking power. As such it is capable of decisively and rapidly attaining its objectives. This normally is accomplished by maneuvering and concentrating its fire power and physical mass against the most vulnerable portions of the enemy defenses with sufficient speed to deny the enemy time properly to meet the attack. The armored characteristic of shock action—resulting from the combination of mobility, maneuverability, and concentrated armored fire power—is brought to its highest state of effectiveness by welding together teams composed of tanks, armored infantry, armored artillery, and armored engineers, each contributing a specific type of action to the combined effort of the team. Supporting these combat teams are the various service elements (fig. 29), one of which is the quartermaster battalion. As one of the service units the battalion helps meet the logistical requirements of the division.

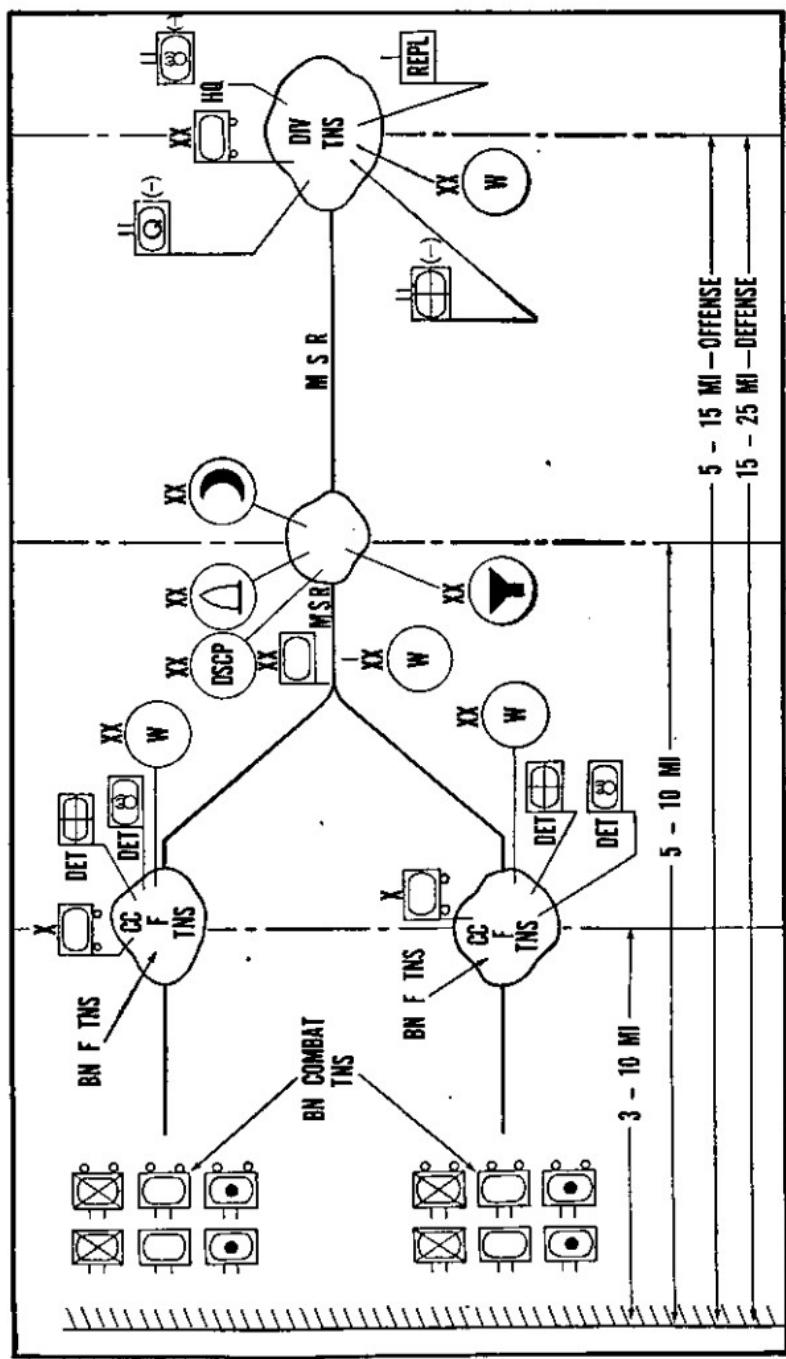


Figure 29. Schematic diagram of logistical installations and units of the armored division.

212. LOGISTICAL CHARACTERISTICS OF THE ARMORED DIVISION

a. The armored division is logically a self-sustaining unit, capable of operating independently for limited periods of time. The division contains approximately 16,000 officers and men and approximately 3,300 vehicles, including over 1,100 full-track vehicles.

b. The division is especially characterized by its large consumption of gasoline and heavy expenditure of ammunition. In moving 100 miles, the division consumes approximately 150,000 gallons of gasoline. The basic load of ammunition for the division exceeds 1,600 tons. The logistical success of the division requires close and continuous support by the service units.

213. LOGISTICAL SUPPORT IN THE ARMORED DIVISION

a. Division Trains. The service units of the division, commonly known as the division trains, contain the necessary service elements to provide logistical and personnel support for the armored division. Division trains are normally composed of the following units (fig. 30) : headquarters and headquarters company, which is provided for the command and administration of the service elements; quartermaster battalion; ordnance maintenance battalion; armored medical battalion; the division band and the armored replacement company. During combat, the rear echelon division headquarters, division signal company (rear), and the division administrative center are usually also a part of division trains.

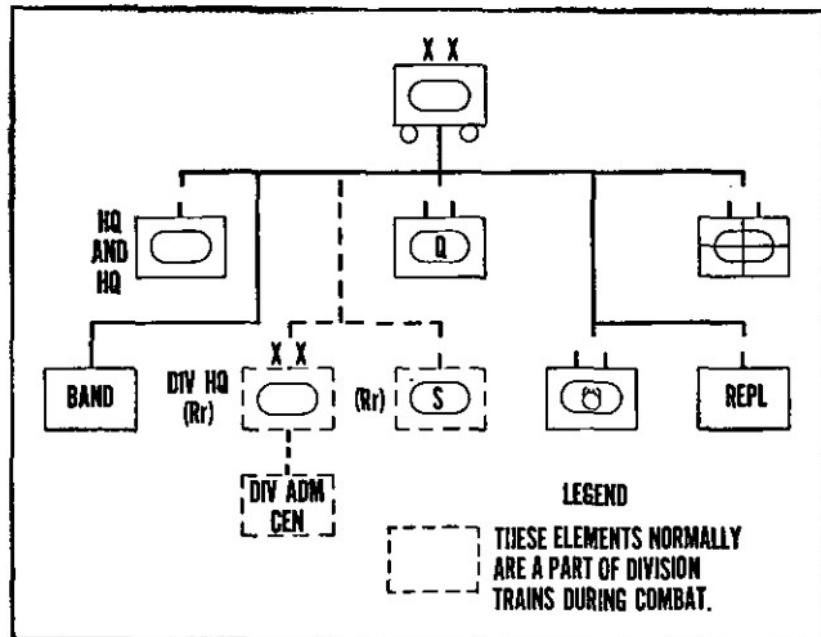


Figure 30. Organization of armored division trains.

b. *Division Supply Control Point (DSCP).* The division supply control point is a control activity and installation to regulate and expedite logistical support of the combat elements, particularly resupply during combat. The DSCP is under the direct supervision of the division G4. It will normally be located well forward on the division main supply route and in front of the division class I, III, and V supply points and division trains (fig. 29). Both rear-bound and forward-bound supply convoys are routed past the DSCP. Here the convoy commander quickly obtains up-to-date information, guides if necessary, and can be reached by or can reach his unit commander by radio.

214. THE QUARTERMASTER BATTALION

a. Mission. The mission of the quartermaster battalion is as follows:

- (1) To support the Armored Division and attached units by providing food, petroleum, oils, and lubricants, quartermaster clothing, and equipment, limited bathing and laundry facilities, and graves registration service.
- (2) To provide by means of its medical detachment medical service for the quartermaster battalion and certain related units.

b. Assignment. The battalion is organic to the Armored Division, T/O & E 17N.

c. Capabilities. The battalion is organized and equipped to provide class I, II, III, and IV quartermaster supplies, limited bathing facilities, laundry, and graves registration service to all organic elements of the division. Complete laundry and graves registration service requires the support of additional elements.

d. Organization. The quartermaster battalion, armored division (fig. 31), is organized under T/O & E 10-45N as follows: headquarters and headquarters detachment (T/O & E 10-46N), quartermaster supply company (T/O & E 10-47N), quartermaster field service company (T/O & E 10-48N), and medical detachment (T/O & E 10-45N).

215. HEADQUARTERS

a. Headquarters and headquarters detachment, quartermaster battalion, provides command, ad-

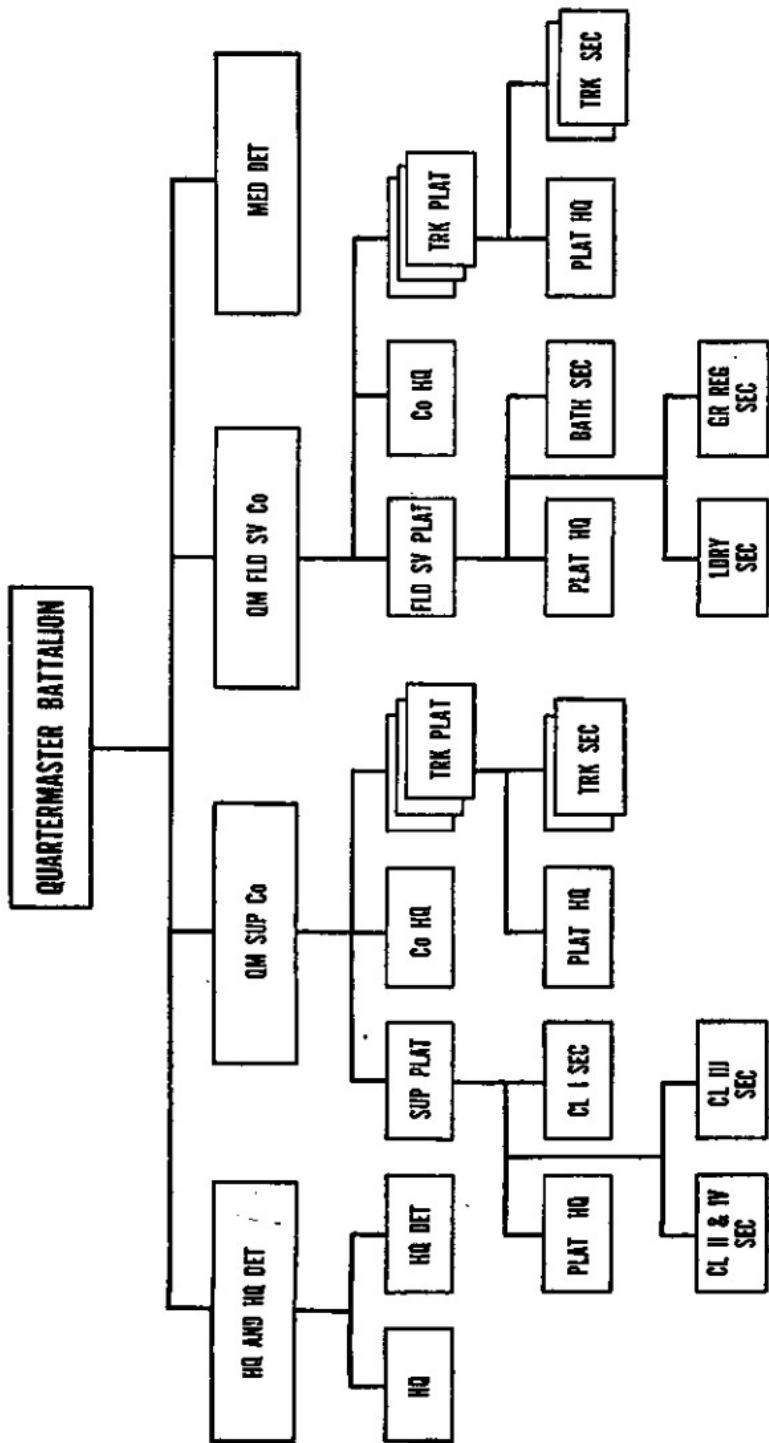


Figure 31. Quartermaster battalion, armored division.

ministrative, and technical supervision of the battalion. The headquarters consists of a battalion headquarters and the office of the division quartermaster. Battalion headquarters directs and controls the administration and operation of subordinate units of the battalion. The quartermaster's office directs the administration of quartermaster activities for the support of the division and supervises the operation of subordinate units of the battalion (fig. 32).

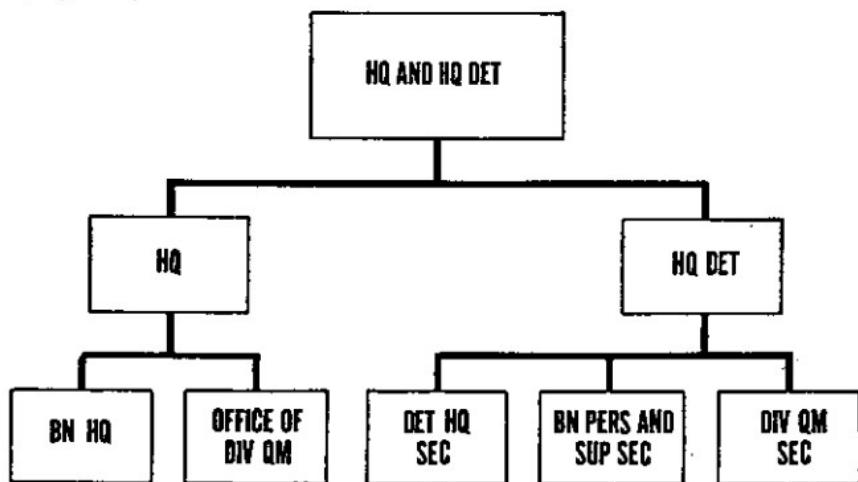


Figure 32. Headquarters and headquarters detachment, organization.

b. Since the headquarters and headquarters detachment have no organic messing facilities, arrangements are normally made to mess with the quartermaster supply company of the battalion.

Section II. COMMUNICATIONS

216. ARMORED DIVISION TRAINS

a. *General.* Although radio is the principal means of communication in the armored division

trains, radio is supplemented by wire and messenger. Telephone communication may be supplied to all units, and teletype communication is normally provided between headquarters and the forward echelon. Sound and visual signals are auxiliary means and, except for the use of vehicular panel and arm and hand signals, are used only in an emergency.

b. Radio Service. Headquarters and headquarters company, armored division trains, operates a secondary station in the division administrative net (rear). This radio-telegraph-telephone net provides radio communication between the division command post and the division trains. The trains headquarters operates a net control station for the trains command net.

c. Wire Service To Higher Headquarters. Construction teams from the armored signal company install and maintain wire lines between division headquarters and the division trains headquarters, the division supply control point, the service battalions, and other units and installations as required. These lines normally are connected to the switchboard at the division headquarters rear echelon (fig. 33). When the division trains are separated so far from the division headquarters rear echelon that the above arrangement is not economical in personnel and equipment, the armored signal company will install a switchboard at division trains headquarters.

d. Messenger Service. The use of scheduled messenger service assumes importance within the division trains because of the greater number of administra-

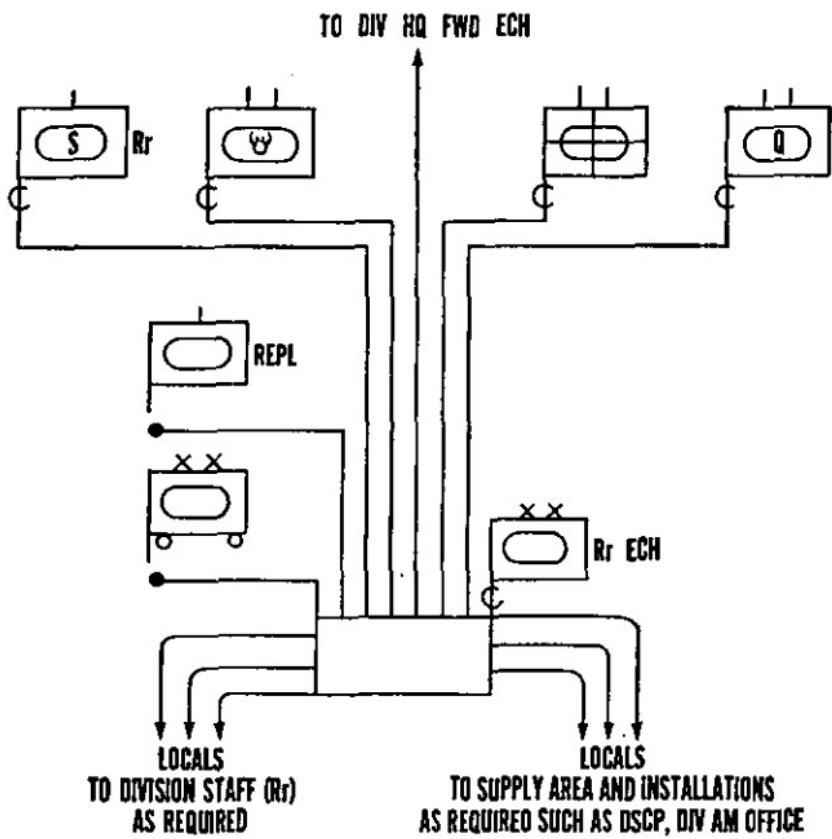


Figure 33. Division trains wire communications system.

tive matters that cannot be handled by electrical means. Messenger service is normally maintained by messengers from the armored signal company between the division command post, the division supply control point, the division headquarters rear echelon, the quartermaster battalion, and other units of the division trains. These messengers usually operate from the division headquarters rear echelon message center.

217. QUARTERMASTER BATTALION

a. Radio Communication To Higher Headquarters.

The quartermaster battalion operates a secondary station in the trains command net. In addition, the armored signal company operates a high-power radio-telegraph-telephone station in the division administrative net (rear). This station usually is located at the division supply control point and is available for use by the division quartermaster.

b. Battalion Command Net. When distances permit, the quartermaster battalion command net provides voice radio communication between the battalion headquarters and the supply company, field service company, and the medical officer. Reference should be made to appropriate T/O & E's for the radio equipment organically provided elements of the battalion. The characteristics and operation of this equipment is covered by publications listed in appendix I.

c. Wire Communication. For wire communication the headquarters and headquarters detachment of the quartermaster battalion is provided with field telephones, switchboard, reel unit, and wire. The supply company and the field service company are also provided with field telephones. For the specific equipment organically provided, reference should be made to appropriate T/O & E's. The characteristics and operation of the equipment is covered by publications listed in appendix I.

d. Messenger Service. The quartermaster battalion operates its own message center, which is located in the battalion headquarters. Personnel with assigned duties as messengers are organic to the head-

quarters detachment, the supply company, and the field service company.

e. *Ground To Air Communication.* For signalling to aircraft, panel sets are organically provided for units of the battalion as listed in appropriate T/O & E's.

Section III. OPERATIONS AND MOVEMENT

218. OPERATIONS

a. *General.* The armored division quartermaster, maintains constant communication and liaison with the G4, to provide information of the over-all tactical and logistical situation so that supply installations may be located to provide maximum support.

b. *Offensive.*

- (1) In offense operations the division class I and III supply points, operated by the division quartermaster, move in close support of the division combat elements. The division class V supply point, utilizing trucks of the quartermaster battalion, is generally in the immediate vicinity of the division class I and III supply points. Generally, approximately forty-eight 2½-ton cargo trucks with 1-ton trailers carry ammunition; the remainder draw rations and carry miscellaneous quartermaster supplies. The three truck platoons carrying ammunition are usually placed under the control of the division ammunition officer, who operates a division ammunition supply point. The balance of the quartermaster battalion (the

battalion less the personnel and vehicles required to operate these supply points) are a part of division trains.

- (2) Dependent upon the tactical situation, G4 will direct the movement and prescribe the location of these division supply points. The division trains commander is responsible for the movement, protection, and assignment of areas for that part of the battalion remaining under his control.

c. Delaying. In a delaying action, the quartermaster battalion would normally move as a part of division trains. In certain situations, however, the battalion may displace rearward immediately ahead of the combat elements.

d. Defensive. In a sustained defense the quartermaster battalion normally operates as a part of division trains, with the battalion well to the rear, out of the range of light artillery. In a protracted defense the division may establish class III and class V supply points, particularly if army installations are a considerable distance to the rear.

219. DIVISION TRAINS

a. The quartermaster battalion moves and locates (for exceptions see paragraph 218*b*) with the division trains, whose movement and location are dependent on the over-all tactical and logistical situation. The principal criterion in the movement and location of the quartermaster battalion with the division trains is to maintain at all times the maximum logistical support consistent with adequate protection.

b. Normally the G4 issues the orders as to when, where, and how to move the division trains. This movement order is normally transmitted by the trains liaison officer located with the forward echelon of division headquarters. The G4, cognizant of the tactical situation and with the forward echelon, is in position to determine the advisability of movement.

220. CONTROL

The trains commander exercises control of the quartermaster battalion through the battalion commander. Trains headquarters maintains records of personnel, vehicles, and armaments of the battalion and keeps a situation map showing the location of the quartermaster battalion in relation to the location and disposition of other division trains units. If the trains march in more than one column, the column commanders are designated by the trains commander. Control is usually maintained by liaison officers and radio. The division trains command net provides the division trains commander with communication with each organic and attached unit of the trains and with the division trains headquarters and headquarters company. Radio is sometimes supplemented by wire communication.

221. METHOD OF MOVEMENT

The division trains commander normally issues oral or fragmentary movement orders in which he prescribes the routes to the new location, order of march, and method of control. The small reconnaissance platoon of headquarters company is used for route and bivouac reconnaissance, and is usually

augmented by quartering parties from each unit of the trains. Movement can be accomplished by displacing the entire trains on one move, by echelons, or by bounds. Protection and security often determine the method to be used.

222. BIVOUAC

The general area for the trains bivouac is designated by the division G4. When the situation permits, the quartermaster battalion is given an area or firm standing near the main supply route, on a good road net.

223. SECURITY

a. The division trains commander is responsible for the security of the division trains, both on the march and in bivouac. The quartermaster battalion is responsible for its own local security. For local protection the battalion is armed with weapons as listed in appropriate T/O & E's. No weapons are provided for the medical detachment. The responsibility for the security of the detachment rests with the battalion commander. Should additional protection be necessary for the quartermaster battalion, the division trains commander must request attachment of combat troops.

b. The trains commander organizes the defensive system for the division trains. He assigns the defensive mission of the quartermaster battalion for all-around defense.

c. Division trains normally march behind combat troops. However, when on the march each column must provide for front, flank, and rear security.

Security is gained from adjacent troops and by marching on routes away from the exposed flank. Isolated enemy group or patrols are overcome by the organic weapons of the column. To counter stronger enemy forces, the division trains commander uses available combat troops or calls for additional help. Security from air attack is obtained by maintaining proper interval and by using all available antiaircraft weapons. Attached and organic antiaircraft weapons are usually dispersed throughout the column to provide maximum protection.

d. In bivouac, security is obtained by use of natural and artificial obstacles, establishment of outposts, maintenance of a close-in defensive system, dispersion, camouflage, use of vehicular weapons, and disposition of attached antiaircraft and ground combat troops to give all-around air and ground protection.

APPENDIX I

REFERENCES

1. ADMINISTRATION AND PERSONNEL

- AR 220-70 Companies: General Provisions.
SR 615-25-15 Military Occupational Specialties.
FM 100-10 Field Service Regulations—Administration.
FM 101-5 Staff Officers Field Manual; Staff Organization and Procedure.
TM 12-250 Administration.
TM 12-255 Administrative Procedures.
TM 12-406 Officer Classification: Commissioned and Warrant.
TM 12-425A Personnel Classification.
Manual for Courts Martial, U. S. Army, 1951.

2. BATHING OPERATIONS AND MAINTENANCE

- FM 21-10 Military Sanitation.
TM 10-1616 Bath Unit, Field, Mobile, 24-Shower-Head (Orr and Sembower 2B-24 and 3B-24).
TM 10-1696 Bath Unit, Field, Mobile, 24-Shower-Head (Cleaver-Brooks "EC-8D").

3. CAMOUFLAGE

- FM 5-20 Camouflage, Basic Principles.
FM 5-20A Camouflage of Individuals and Infantry Weapons.
FM 5-20B Camouflage of Vehicles.
FM 5-20C Camouflage of Bivouacs, Command Posts, Supply Points, and Medical Installations.

FM 5-20G	Camouflage of Rear Areas and Fixed Fortifications.
FM 5-20H	Camouflage Materials and Manufacturing Techniques.

4. COMMUNICATION

FM 7-24	Communication in Infantry and Airborne Divisions.
FM 17-70	Signal Communication in the Armored Division.
FM 24-5	Signal Communications.
FM 24-18	Field Radio Techniques.
FM 24-20	Field Wire Technique.

5. DEMOLITION

FM 5-25	Explosives and Demolitions.
TB QM 27	Demolition of Quartermaster Supplies and Equipment.

6. FOOD SERVICE AND MESS MANAGEMENT

FM 21-10	Military Sanitation.
TM 5-637	Inspections and Preventive Maintenance Services for Kitchen Equipment.
TM 10-402	Mess Management.
TM 10-401	Food Service Supervision.
TM 10-405	The Army Cook.
TM 10-412	Recipes.

7. GRAVES REGISTRATION OPERATIONS

FM 10-63	Graves Registration.
TM 10-632	Kits, Fingerprint.

8. INDEXES

SR 110-1-1	Index of Army Motion Pictures and Film Strips.
SR 310-20	Series, Military Publications.

9. LAUNDRY OPERATIONS AND MAINTENANCE

- TM 3-220 Decontamination.
TM 10-1680 Laundry, Mobile, Two-Trailer Type.

10. MILITARY AND SPECIAL OPERATIONS

- FM 17-34 Amphibious Tank and Tractor Battalions.
FM 17-100 Armored Division and Combat Command.
FM 31-5 Landing Operations on Hostile Shores.
FM 31-25 Desert Operations.
FM 31-35 Air-Ground Operations.
FM 70-10 Mountain Operations.
FM 70-15 Operations in Snow and Extreme Cold.
FM 71-30 Employment of Airborne Forces.
FM 72-20 Jungle Warfare.
FM 100-5 Field Service Regulations—Operations.

11. MILITARY TERMS, ABBREVIATIONS, AND SYMBOLS

- SR 320-5-1 Dictionary of United States Army Terms.
SR 320-50-1 Authorized Abbreviations.
FM 21-30 Conventional Signs, Military Symbols,
and Abbreviations.
Dictionary of United States Military
Terms for Joint Usage.

12. QUARTERMASTER LOGISTICS AND PLANNING

- FM 10-10 Quartermaster Service in Theater of
Operations.
FM 10-13 Quartermaster Reference Data.
FM 17-50 Logistics, Armored Division.
FM 31-40 Supply by Air in Combat Operations.
FM 100-10 Field Service Regulations—Administra-
tion.
FM 101-5 Staff Organization and Procedure.
FM 101-10 Organization, Technical, and Logistical
Data.

13. RELATED UNITS

FM 7-30	Service and Medical Companies, Infantry Regiment.
FM 10-6	Quartermaster Service Company.
FM 10-15	Quartermaster Sales Company, Mobile.
FM 10-16	Quartermaster Laundry Company, Semi-mobile.
FM 10-18	Quartermaster Salvage Company.
FM 10-22	Quartermaster Clothing and General Supplies Depot Company (T/O & E 10-227).
FM 10-53	Headquarters and Headquarters Detachment, Quartermaster Battalion.
FM 10-77	Quartermaster Petroleum Supply Company Mobile.
TM 10-645	Fumigation and Bath Company.

14. SALVAGE, BASIC MAINTENANCE, AND REPAIR

TM 10-260	Quartermaster Salvage, Theater of Operations.
TM 10-267	Repair of Clothing and Textiles.
TM 10-270	Repair of Quartermaster Items of General Equipment.
TM 10-633	Canvas Repair Kit.
TM 37-305	Typewriter Maintenance.
AR 750-5	Maintenance of Supplies and Equipment—Maintenance Responsibilities and Shop Operation.

15. SUPPLY OPERATIONS

Appropriate Unit Tables of Organization and Equipment.	
AR 30-2210	Quartermaster Corps—Rations.
SB 10-438	Size Tariff for Clothing, Equipage, and Footwear Items.
SB 10-495	Standard B Ration Menu and Requisition Guide.
SB 38-5-3	List of Standard Lubricants, Hydraulic Fluids, Liquid Fuels, and Preservative Materials Used by the Department of the Army.

T/A 10-100	Allowances of Quartermaster Expendable Supplies.
T/A 21	Clothing and Equipment.
TB QM 53	Field Rations, Food Packets, and Ration Supplement Packs.
TM 10-228	Fitting of Shoes and Socks.
TM 10-466	Handling Petroleum Products.
TM 38-403	Station Supply Procedure.

16. TRAINING

FM 5-15	Field Fortifications.
FM 5-31	Land Mines and Booby Traps.
FM 20-15	Tents and Tent Pitching.
FM 21-5	Military Training.
FM 21-10	Military Sanitation.
FM 21-11	First Aid for Soldiers.
FM 21-15	Individual Clothing and Equipment.
FM 21-20	Physical Training.
FM 21-25	Elementary Map and Aerial Photograph Reading.
FM 21-40	Defense Against Chemical Attack.
FM 22-5	Drill and Ceremonies.
FM 22-10	Leadership.
23 series of Field Manuals	on Basic Weapons.
FM 26-5	Interior Guard Duty.
FM 27-10	Rules of Land Warfare.
FM 30-15	Examination, Personnel and Documents.
FM 30-30	Aircraft Recognition Manual.
FM 30-40	Recognition Pictorial Manual, Armored Vehicles.
FM 100-5	Field Service Regulations—Operations.
TM 3-205	The Gas Mask.
TM 3-305	Use of Chemical Agents and Munitions in Training.
TM 5-315	Fire Protection by Troop Organizations in Theaters of Operation.
ATP 21-1	Basic Military Training Program for Newly Enlisted Men.
10 series of Army Training Programs.	

17. TRANSPORTATION AND MOVEMENTS

- | | |
|---------------|--|
| FM 25-10 | Motor Transport. |
| FM 101-10 | Organization, Technical, and Logistical Data. |
| DA Pam 29-11 | Movement Regulations for Oversea Movement of Units, Casuals, Replacements, and Individuals. |
| DA Pam 29-15* | Movement Regulations, Air Transportation. |
| DA Pam 29-16* | Movement Regulations, Transportation of Individuals and Cargo on Aircraft of the Military Air Transport Service. |

18. VEHICLE OPERATION AND MAINTENANCE

- | | |
|------------|--|
| AR 700-15 | Oversea Preparation and Shipment of Property. |
| TM 9-2700 | Principles of Automatic Vehicles. |
| TM 9-2800 | Military Vehicles. |
| TM 21-300 | Driver Selection, Training, and Supervision, Wheeled Vehicles. |
| TM 21-305 | Driver's Manual. |
| TM 21-306 | Manual for the Full-Track Vehicle Driver. |
| TM 31-200 | Maintenance and Care of Pneumatic Tires and Rubber Treads. |
| TM 37-2810 | Motor Vehicle Inspection and Preventive Maintenance Services. |

*Not stocked in AG deposits.

APPENDIX II

LOGISTICAL SUPPLY DATA AND SUPPLEMENTARY INFORMATION

Section I. CLASS I SUPPLY OPERATIONS

1. TYPES OF RATIONS

Rations in theaters of operation consist largely of field rations. Since military operations are conducted under a variety of conditions and circumstances, no one type of field ration will fill the needs of every situation. For a complete list and description of subsistence supplies, reference should be made to FM 100-10. Types of rations and items of class I and special issue of normal use in divisional operations are identified for the purpose of requisitioning and as a guide to their use as follows:

a. Unit Feeding. When centralized messing of a unit is possible, field ration A or operational ration B is used. These consist of both rations and ration supplements and require cooking facilities.

(1) *Field ration A.* Field ration A is the basic field ration. It contains a maximum number of perishable foods including fresh fruits, meats, and vegetables. The A ration is used whenever and wherever circumstances permit.

- (2) *Operational ration B.* Operational ration B corresponds as nearly as practicable to the field ration A. However, such non-perishables as canned or dried fruits and vegetables and canned meats are substituted for the perishable items. Type B provides an adequate diet over a long period of time. It is designed for use when perishables cannot be provided or preserved.
- (3) *Ration supplements.* To facilitate the handling and distribution of field rations, certain supplementary components are packaged and distributed separately:
- (a) The spice pack; kitchen, is a ration supplement that provides spices and condiments for 1000 rations of the type A or B. The spice pack is used to facilitate breakdown and issue in the field.
 - (b) The special items pack, aid station, is a ration supplement that provides a variety of hot, stimulating beverages for casualties clearing through aid stations. The beverages, coffee, tea, or cocoa, offer nourishment, assist in the treatment of shock, and promote comfort and general well-being. The components of each pack contain enough ingredients to provide 290 12-ounce drinks. Some type of field cooking equipment is required for preparation.
 - (c) The sundries pack is issued as a supplement to field ration A and operational ration B. It is not issued with combat-

type rations. It is composed of items essential to the health and comfort of troops, including toilet articles, tobacco, and confections. The sundries pack is designed for issuance of these items when army exchange or similar sales facilities are not available.

b. Small Group Feeding (the 5-in-1 Ration). The small-detachment ration, 5-in-1, provides food for five men for 1 day. It consists of precooked or prepared food which may be eaten either hot or cold. It also includes certain welfare items such as soap, toilet paper, water purification tablets, cigarettes, and matches. The 5-in-1 ration is designed for small group feeding, but it may be used to a limited extent for unit feeding. It is used where organized messing cannot be accomplished and where the individual ration is not mandatory. Such situations arise, for example, when tank crews, patrols, or similar small groups deploy beyond the range of their unit kitchens.

c. Individual Feeding. Rations for individuals are intended for use when the tactical situation is such that messing even in small groups is not possible and no kitchen facilities are available. They are packaged so that they can be carried by the individual and include both rations and partial rations, or food packets—

(1) *Individual combat ration.* The individual combat ration (C) provides food for one man for 1 day. It consists of precooked or prepared foods which may be eaten either hot or cold. The ration may be used over

periods from a few days to an extreme of 3 weeks but should not be used for more than 7 successive days.

- (2) *Individual assault food packet.* The individual assault food packet (IA) is provided troops in the initial phase of assault, when food is required that is lightweight, palatable, and conveniently carried by the individual. The food may be eaten hot or cold but is not intended for a single meal, nor will any combination of packets make a balanced day's ration. Heating tablets are included, and there is also an accessory packet containing welfare items. The food contained is designed for a period not to exceed 30 hours.
- (3) *Individual survival food packets.* The individual survival food packets are designed to meet survival conditions with minimum bulk and weight. They are an item of personal equipment for all troops participating in active operations by land, sea, or air, and are issued for emergency use only. Type SA is designed for use in arctic regions. Type ST is designed for use in temperate or tropical regions.

2. POLICIES GOVERNING THE USE OF RATIONS

a. Rations other than types A and B are special purpose rations. Although some of them provide a lower nutritional value, they may be used over short periods of time without affecting the troops. When troops go into battle, low consumption of foods normally occurs owing to the stress and strain

of the situation. Because of lack of variety and attending monotony, the use of these rations beyond prescribed limits impairs the operational efficiency of troops. It is incumbent upon all officers exercising the function of command to adhere to the limits prescribed to the greatest extent possible. Field commanders when authorized may increase the basis of issue of these rations or other components as climatic conditions or nutritional requirements dictate.

b. When the tactical situation permits, field commanders must endeavor to issue to all personnel a minimum of one hot meal daily from the A or B ration. The A ration is intended for use primarily in stable conditions and static phases of military operations; however, it should be issued in preference to other types whenever it is available and circumstances permit. Fresh foods, when obtainable, may also be used to supplement the B ration. Compared to the A and B rations, packaged rations are expedients to be used only when kitchens cannot be pushed forward. It has been shown that a kitchen-prepared hot meal can be made available even under highly adverse tactical situations.

c. Normally, organizational and unit reserves consist largely of type B operational rations and individual type rations. A mixed reserve best answers the two kinds of demands generally made against subsistence reserves—as a working stock to cover minor variations in unit issues, and as supplies held for emergency needs.

3. CHARACTERISTICS OF STANDARD RATIONS

Tables showing the characteristics of standard rations are given in FM 10-13 and FM 101-10.

4. DRAWING UNITS

The following is a table of divisional units and organizations that normally submit their requisitions directly to the office of the division quartermaster and draw their supplies from division distributing points.

Drawing units	Infantry	Airborne	Armored
Division Headquarters and Headquarters Company-----	1	1	1
The Band. ¹			
Signal Company-----	1	1	1
Military Police Company-----	1	1	1
Headquarters and Headquarters Companies, Combat Command-----			2
Headquarters and Headquarters Company, Reserve Command-----			1
Division Trains Headquarters and Headquarters Company-----			1
Ordnance Maintenance Company-----	1	1	-----
Ordnance Maintenance Battalion-----			1
Quartermaster Company-----	1	1	-----
Quartermaster Battalion-----			1
Replacement Company-----	1	1	1
Reconnaissance Company-----	1	1	-----
Reconnaissance Battalion-----			1
Parachute Maintenance Company-----		1	-----
Antitank Platoon, Airborne Division. ²			
Engineer Battalion-----	1	1	1

¹ Attached for supply purposes to Division Headquarters and Headquarters Company, Infantry and Airborne Divisions, or to Division Trains Headquarters and Headquarters Company, Armored Division.

² No organic kitchen. Attached to other headquarters for supply purposes.

Drawing units	Infantry	Airborne	Armored
Medical Battalion-----	1	1	1
Infantry Battalions-----			4
Infantry Regiments-----	3	3	-----
Heavy Tank Battalion-----	1	-----	1
Medium Tank Battalions-----		2	3
Division Artillery, Headquarters and Headquarters Battery-----	1	1	1
Field Artillery Battalions-----	4	4	4
Antiaircraft Artillery, Automatic Weapons Battalion-----	1	1	1
Normal total-----	19	21	27

5. TIME ELEMENTS IN THE DISTRIBUTION OF CLASS I SUPPLY

Tables showing the time elements in the distribution of class I supply are given in FM 10-13 and FM 101-10.

Section II. CLASS II & IV SUPPLY OPERATIONS

6. SIZE TARIFF FOR CLOTHING AND FOOTWEAR ITEMS

a. Regular Tariff Sizes. The tariff sizes listed in the following paragraphs cover issue of selected items of regular clothing and footwear. This information indicates sizes currently being procured. It may be used for planning purposes, as a guide to distribution and range of sizes in items requested for shipment in tariff sizes. It must be remembered, however, that the accuracy of fitting individuals from tariff stocks

will be in direct proportion to the quantity of the item requested. In general, the larger the quantity, the wider will be the range of sizes provided.

- (1) Shipments in tariff sizes should be requested by the quartermaster only in the absence of specific information on the troops to be supplied.
- (2) Information on tariff sizes is useful, however, in establishing the class II reserve when authorized. Since the number and quantity of items carried in the division reserve is normally very limited, the information provided in the following paragraphs may be used as a checklist for those sizes most generally required. Requisitions can then be prepared for the specific sizes and quantities required to maintain the best possible range within the limits of the quantity authorized to be carried as a reserve.

b. Supplemental Tariff Sizes.

- (1) There are no supplemental tariff sizes for clothing items.
- (2) Supplemental tariff sizes of footwear are defined as sizes on which frequency of issue does not justify inclusion in regular tariff, but which may be made available from stand-by stocks. Stock levels of these items will be maintained by oversea requisitioning agencies in accordance with current procedures. For lists of supplemental tariffs and for regular tariffs on items not included in the following paragraphs, reference should be made to SB 10-438.

7. TARIFF SIZES FOR SOCKS

The following tariff applies to socks, wool, cushion sole; socks, wool, light, OD; and socks, wool, light, white.

<i>Size</i>	<i>Tariff per 1,000</i>	<i>Size</i>	<i>Tariff per 1,000</i>
9-----	7	11½-----	170
9½-----	8	12-----	63
10-----	29	13-----	10
10½-----	303	14-----	2
11-----	408		

8. TARIFF SIZES FOR FOOTWEAR

The following tariff applies to boots, service, combat, composition sole; shoes, service (type I); shoes, service, rebuilt; and shoes, service, reversed-uppers, composition sole (type III).

<i>Size</i>	<i>Tariff per 1,000</i>	<i>Size</i>	<i>Tariff per 1,000</i>
5B-----	1	6½E-----	12
5C-----	1	6½EE-----	9
5D-----	2	7A-----	1
5E-----	2	7B-----	2
5EE-----	2	7C-----	10
5½B-----	1	7D-----	24
5½C-----	1	7E-----	18
5½D-----	3	7EE-----	10
5½E-----	6	7½A-----	1
5½EE-----	4	7½B-----	3
6B-----	1	7½C-----	15
6C-----	3	7½D-----	35
6D-----	8	7½E-----	23
6E-----	9	7½EE-----	13
6EE-----	7	8A-----	1
6½A-----	1	8B-----	6
6½B-----	1	8C-----	23
6½C-----	5	8D-----	47
6½D-----	12	8E-----	28

<i>Size</i>	<i>Tariff per 1,000</i>	<i>Size</i>	<i>Tariff per 1,000</i>
8EE-----	15	10½A-----	3
8½A-----	1	10½B-----	8
8½B-----	8	10½C-----	17
8½C-----	27	10½D-----	21
8½D-----	54	10½E-----	11
8½E-----	31	10½EE-----	5
8½EE-----	15	11A-----	3
9A-----	2	11B-----	7
9B-----	10	11C-----	11
9C-----	31	11D-----	13
9D-----	52	11E-----	7
9E-----	27	11EE-----	3
9EE-----	12	11½A-----	2
9½A-----	2	11½B-----	4
9½B-----	10	11½C-----	7
9½C-----	29	11½D-----	6
9½D-----	42	11½E-----	3
9½E-----	21	11½EE-----	2
9½EE-----	11	12A-----	2
10A-----	3	12B-----	3
10B-----	12	12C-----	4
10C-----	25	12D-----	5
10D-----	34	12E-----	2
10E-----	17	12EE-----	1
10EE-----	8		

9. TARIFF SIZES FOR UNDERWEAR

a. Drawers.

<i>Size</i>	<i>Cotton shorts, OD or white; tariff per 1,000</i>	<i>Winter, 50% cotton, 50% wool, OD or white; tariff per 1,000</i>
Small-----	600	510
Medium-----	310	370
Large-----	75	102
X-Large-----	13	16
XX-Large-----	2	2

b. Undershirts

Size	Shirts, tee; tariff per 1,000	Cotton, summer, sleeveless, OD or white; tariff per 1,000	Winter, 50% cotton, 50% wool, OD or white; tariff per 1,000
Small -----	420	683	610
Medium -----	470	267	320
Large -----	90	44	65
X-Large -----	20	6	5

**10. TARIFF SIZES FOR JACKETS AND TROUSERS,
HBT**

Size	Jacket tariff per 1,000	Trousers tariff per 1,000
Small -----	630	570
Medium -----	332	370
Large -----	36	55
X-Large -----	2	5

11. WEIGHT OF COMMON CLOTHING ITEMS

Item	Unit weight (pounds)	Number items per 60 pounds *
Drawers, winter-----	0.77	78
Drawers, cotton-----	.21	286
Handkerchief, cotton-----	.06	1,000
Jacket, HBT-----	1.50	40
Shirt, cotton, khaki-----	1.25	48
Socks, wool, light-----	.13	461
Socks, wool, cushion sole-----	.19	316
Socks, wool, heavy-----	.25	240
Trousers, field, cotton, OD-----	1.50	40
Trousers, HBT-----	1.50	40
Trousers, lightweight-----	.92	65
Undershirt, winter-----	.83	72
Undershirt, cotton, sleeveless-----	.22	273
Blanket, wool, OD-----	4.00	15
Towel, bath-----	.75	80

*Normal dry-weight capacity washer load of the laundry, mobile, two-trailer type.

APPENDIX III

SERVICE DATA AND SUPPLEMENTARY INFORMATION

1. TABULATED DATA FOR BATH UNIT

Trailer dimensions:

Height	57.5 inches.
Width	70.0 inches.
Length	12.5 feet.
Cubage	303 cubic feet.
Area occupied	63.2 square feet.

Weight (trailer and equipment) 4,115 pounds.

Approximate fuel-oil consumption

(per 8-hour operating day at full capacity):

Burner fuel (oil, gasoline, or kerosene)	88 gallons.
Engine (gasoline)	4 gallons.

2. TABULATED DATA FOR LAUNDRY UNIT

Trailer dimensions:

Note. Dimensions for the washer trailer and drying tumbler trailer are the same.

Height	84 inches.
Width	78 inches.
Length	14 feet.
Cubage	637 cubic feet.
Area occupied	91 square feet.

Weight (trailer and equipment):

Washer trailer	4,365 pounds.
Drying tumbler trailer	4,288 pounds.

Approximate fuel-oil consumption

(per 8-hour operating day at full capacity):

Burner fuel (gasoline)	52 gallons.
Engine (gasoline)	16 gallons.

3. LAUNDRY UNIT SUPPLY REQUIREMENTS

The authorized supplies required for each laundry unit per month, based on two loads per hour, operating 96 hours per week, are as follows:

Detergent, liquid (synthetic soap for warm climates)-----	68 gallons.
Detergent, powder (synthetic soap for cold climates)-----	68 pounds.
Sour, laundry-----	10.5 pounds.

4. WASHING FORMULA, WHITE AND COLORED COTTON CLOTHING

Operation	Water level <i>Inches</i>	Time <i>Minutes</i>	Temper- ature (° F.)	Supplies
1. Suds-----	6	5	110	Detergent (3 ounces).
2. Suds-----	5	5	140	Detergent (3 ounces).
3. Rinse-----	9	3	140	
4. Rinse-----	9	3	120	
5. Rinse-----	9	3	100	Sour (3 ounces).

5. WASHING FORMULA, WOOL CLOTHING AND BLANKETS

Operation	Water level <i>Inches</i>	Time <i>Minutes</i>	Temperature (° F.)	Supplies
1. Suds-----	6	5	100	Detergent (3 ounces).
2. Suds-----	6	5	100	Detergent (3 ounces).
3. Rinse-----	10	3	100	
4. Rinse-----	10	3	100	
5. Rinse-----	10	3	100	Sour (3 ounces).

6. WASHING FORMULA, PERMEABLE CLOTHING

a. When the Impregnite Is To Be Protected. Permeable protective clothing may be laundered with a minimum of damage to the impregnite by using the formula for woolens, with the following modifications: Mild soap should be used and the temperature of the wash water must be maintained at 90° F. because higher temperatures will destroy the impregnite. No sour will be used in the final rinse, because acid solutions attack the active ingredient in the clothing. When the woolen's formula is used, permeable clothing may be laundered about four times before it is necessary to reimpregnate it. Normally, after being laundered, protective clothing should be turned over to a chemical processing unit which will inspect and, when necessary, reimpregnate it.

b. When the Impregnite Is To Be Removed. If it should become necessary to remove the impregnite from protective clothing, the formula is as follows:

Operation	Water level <i>Inches</i>	Time <i>Minutes</i>	Temper- ature (° F.)	Supplies
1. Suds-----	8	60	145	Kerosene (4 gallons). Detergent (12 ounces).
2. Rinse-----	9	2	120	
3. Suds-----	9	5	140	Detergent (12 ounces).
4. Suds-----	9	5	140	Detergent (6 ounces).
5. Rinse-----	9	2	120	
6. Rinse-----	9	5	135	Sour (6 ounces).
7. Rinse-----	9	2	120	
8. Rinse-----	9	15	120	Sodium thiosulfate (3 ounces).
9. Rinse-----	9	15	120	
10. Rinse-----	9	15	120	

Note. The kerosene and sodium thiosulfate must be secured through normal supply channels.

7. WASHING FORMULA, DECONTAMINATING CLOTHING

a. Whenever possible, clothing contaminated by liquid chemical agents should be evacuated in gas-resistant sacks or other air-tight containers for laundering by larger units attached to higher headquarters. All personnel handling contaminated clothing must be dressed in impermeable clothing and

gas masks. If it is necessary for such work to be processed by the divisional laundry section, precautions must be taken to protect the operators, and the contaminated clothing will be removed from the containers as soon as possible after receipt. Contaminated clothing left in air-tight containers will deteriorate rapidly.

b. The formula for decontaminating cottons and linens is as follows:

Operation	Water level <i>Inches</i>	Time <i>Minutes</i>	Temperature (° F.)	Supplies
1. Suds-----	8	5	100	Detergent (3 ounces).
2. Suds-----	8	5	140	Detergent (3 ounces).
3. Suds-----	8	5	140	Detergent (3 ounces).
4. Rinse-----	10	5	140	
5. Rinse-----	10	5	120	
6. Rinse-----	10	5	120	

c. The fabric of woolen or part-woolen clothes that have been contaminated with a chemical agent will be damaged extensively by machine washing and is best decontaminated by the methods prescribed in TM 3-220. If it is necessary to decontaminate by washing, the formula used for cottons and linens may be used, but the washer must be stopped during draining and refilling to prevent as much damage to the fabric as possible.

d. All clothing, either cotton or woolen, which after washing is still contaminated should be

laundered again, using the cotton and linen formula. If the chemical agent is still present after the second processing, the items should be discarded and either burned or buried.

8. LAUNDRY FIELD EXPEDIENTS

The operations of a laundry unit are of such nature that efficiency in the field may frequently be increased by improvisations in equipment. The following expedients have been used to advantage in the field:

a. When the washer trailer is operating at a very heavy load, a drainage ditch instead of the drainage hose may be used to carry off waste water, provided there is sufficient gradient to prevent overflowing of the ditch.

b. Time and labor may be saved in transporting clothes from one area to another at the laundry site by stringing a tight wire on which a small trolley is suspended. The bags of clothing may be hooked to the trolley, and if the apparatus is correctly arranged, a strong push will move the clothes from one location to another.

c. By placing laundry baskets on a hand cart, the baskets can be moved by one man, thus easing the burden of carrying the clothes within the area.

d. If there is a shortage of detergent, a substitute can be made by placing GI soap in a gasoline drum and dissolving it in hot water in the proportion of 3 pounds of soap to 4 gallons of water. It may be necessary to boil the solution to dissolve the soap.

e. When it is impossible to locate the laundry adjacent to a stream, an improvised water carrier can

be made by placing a large tank made of canvas in a standard 2½-ton truck. The tank should be divided into four sections by means of splash plates, so that the water will not splash forward and leave the truck in the event of sudden stops.

9. OPERATIONS UNDER UNUSUAL CONDITIONS

a. Cold Weather Precautions.

- (1) *Bath units.* During cold weather, special attention must be given to the thorough draining of water from all units and assemblies involved in the water-supply and heating systems. In freezing weather, water should be drained from the boiler and shower assembly each time operations are suspended. All sections of hose should be disconnected and suspended in such a manner as to permit their complete drainage. The auxiliary pump, if used, and the main pump must be drained and checked to see that all parts are completely free from moisture. Winter operation and lubrication of the bath units are covered in TM 10-1696.
- (2) *Laundry units.* The two-trailer type of laundry unit is not designed for operation in freezing temperatures. When the outside temperature is below 32° F., operations will be performed inside a heated building or enclosure. When the laundry unit is set up inside, all exhaust tubes and ducts must lead to the outside of the enclosure to eliminate gas fumes and heat. The exhaust ends should be placed to the leeward when

possible. When the unit is not in operation, even for a short time, certain precautions must be taken. The unit must be drained completely—all plugs removed, all water valves opened, and all hose drained. If it should become necessary to produce water for laundering operations by melting ice or snow, ice is preferable to snow because it is compact. When ice is melted, it retains approximately its own value in water.

b. Precautions In Extreme Heat and Dust. In extreme heat operations are normal with the exception of more frequent lubrication. Excessive heat tends to make lubricants break down more rapidly. During a sand or dust storm, equipment must be protected by tarpaulins and all fuel and oil containers kept covered. After a dust or sand storm, all exposed parts must be checked, together with air cleaners and fuel strainers. Parts that are gritty must be removed, cleaned, relubricated, and reinstalled. Motors can be cleaned by blowing them out with compressed air. The washers, extractors, and tumblers of the laundry units must be wiped out on the inside and washed with clean water before operations are resumed.

APPENDIX IV

QUARTERMASTER SUPPORT IN AMPHIBIOUS OPERATIONS

Section I. CHARACTER OF AMPHIBIOUS OPERATIONS

1. DEFINITION

An amphibious operation is a landing made from ships or craft to achieve an objective on land. In such operations the forces involved are dependent primarily upon water-borne means for transport to the objective area, for initial tactical and logistical support, and upon special techniques and equipment for use in debarking on a shore. Amphibious operations are normally joint operations in which the assigned forces are composed of elements of the Army, Navy, and Air Force.

2. TYPES OF OPERATIONS

Types of amphibious operations are determined by the types of vessels employed; namely, those which can place personnel, vehicles, and supplies directly on the beach, and those which require transshipment of troops, vehicles, and supplies to smaller landing craft for movement to the beach. Amphibious operations are accordingly classified as shore-to-shore operations and ship-to-shore operations. The geo-

graphical features of the landing area will determine the type and quantity of the special amphibious equipment needed in a particular operation. Amphibious tanks are employed in leading assaults against beaches. Amphibious tractors are used primarily from ship to shore where reefs, bars, shallow approaches, or man-made obstacles preclude the use of faster landing craft.

3. LANDING FORCE

a. The landing force consists of all troops to be put ashore for execution and support of the assault. This includes service troops as well as combat units. The infantry division usually is the basic organization in a landing operation. Each division forms three regimental combat teams. Each RCT forms three battalion landing teams. The BLT is the basic task organization for assault landing. For that purpose it includes those elements of the basic battalion organization and attached units that are required in the actual assault of the beach. It actually is an independent unit in the initial stages of the landing before reserves and support elements land.

b. As is the case in all military operations, organization for an amphibious operation is flexible. Any unit may be required to modify or curtail its organization to meet limitations imposed by availability of slipping. Numbers and types of ships and craft are usually limited, and the composition of the landing force with its equipment must conform to the capacity of the available vessels.

c. Once ashore and off the beach, the task of combat units is the same as combat under any other cir-

cumstances. However, special attention must be given to establish the logistic services to support the operation. This is the mission of the shore party.

4. SHORE PARTY

a. The shore party is a composite army and naval unit formed for the purpose of facilitating the landing and movement of troops and material across the beach. The landing force component may be a combat engineer unit that is augmented by military police, motor transport, quartermaster, ordnance, special equipment, and amphibious vehicles, or it may be the shore elements of an engineer special brigade. For the detailed organization of a typical engineer special brigade (reinforced), see FM 101-10.

b. The shore party assigns areas (fig. 34) for such purposes as supply points, dewaterproofing of tanks and wheeled vehicles, and beach aid stations. It assists vehicles and craft that broach or become mired. It improves the beach for landing of tanks and heavy vehicles by clearing obstacles and by grading routes from the water's edge to firmer ground inland. Amphibious tractors land the supplies needed for the initial phases of the operation. The shore party uses these supplies to set up and operate supply points. First elements of the shore party will land as early as possible in the assault waves.

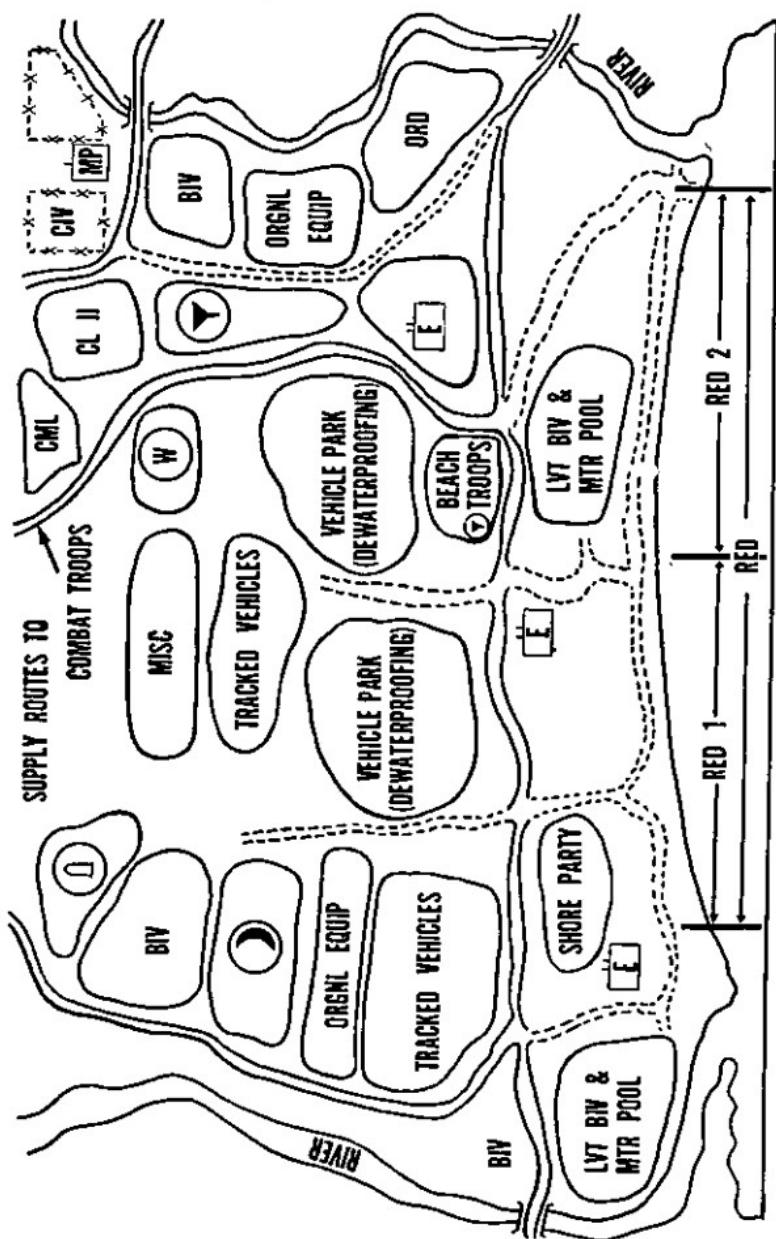


Figure 34. Schematic diagram of beach.

5. QUARTERMASTER ORGANIZATION AND OPERATION

a. General. The organization and employment of quartermaster elements of the landing force will be formulated in the quartermaster annex to the administrative order governing the amphibious operation. Specific organization and echelonment of quartermaster elements will depend upon the size of the operation and the number and types of units involved. Over-all quartermaster support may be planned and supervised by a task force, army, or corps quartermaster of the staff of the command directing the operation. Whatever the echelonment and the extent of the logistical chain, the division quartermaster looks to higher echelons for divisional support and must, in turn, plan and provide the necessary supplies and service required for the support of the division.

b. Division Shore Party. The division shore party will set up central control of the beach organization within the division area as soon as possible after the assault waves land. All beach organization and control then will be under division direction. The division quartermaster will provide vehicles, personnel, and equipment for quartermaster elements of the division shore party from organic and attached quartermaster units.

Section II. QUARTERMASTER SUPPORT

6. SERVICE SUPPORT

During the opening phases of the assault, graves registration service is the only quartermaster service

which is operationally required. Additional service support is provided as soon after the original assault as movement priorities and available equipment will permit. Laundry facilities are normally used initially to provide laundry service to medical installations in the field. Bath facilities are ordinarily not made available until the later stages of the operation when the objective area has been made secure.

7. SALVAGE

As soon as the quartermaster becomes operational all salvage is removed to collecting points (along routes of communication to the rear) established for this purpose. More than average care should be taken in the collection and receipt of salvage during the early days of the assault, since salvage and abandoned enemy matériel may be especially valuable as auxiliary means of supply.

8. SUPPLY SUPPORT

Supply support constitutes the major quartermaster concern in an amphibious operation. It includes the planning, requisitioning, issue, loading, transportation of reserves, and the establishment of supply installations on the far shore. The supply support of an amphibious operation is in many respects similar to that of an airborne operation. The division quartermaster is responsible for planning the supply requirements of the division, based on consolidated unit requisitions and the supply plans prepared by higher headquarters for the support of the assault. Individual and unit reserves are requi-

sitioned and issued prior to embarkation, and their loading and transportation becomes the responsibility of the unit commanders in accordance with the movement and loading plans prepared for the assault. The types and quantities of all classes of supply to accompany the landing force will be published in administrative orders. The division quartermaster is responsible for the maintenance and transportation of division reserves.

9. SUPPLY PHASES

Supply in an amphibious operation may be divided into four phases—assault, build-up, port, and normal.

- a.* Supply during the assault phase is characterized by the establishment of beach dumps for the support of the forces taking part in the assault.
- b.* Supply during the build-up phase is characterized by the establishment of beach maintenance areas for the support of combat forces arriving on follow-up convoys and combat forces moving inland.
- c.* Supply during the port phase is characterized by the arrival and distribution of bulk shipments through a port of debarkation.
- d.* Supply during the normal phase is characterized by the completed establishment of a fully integrated supply system.

10. LOADING PLANS

So far as possible, loading plans should conform to the general principles of combat loading. Combat loading is the loading of assault troops, together with their essential combat equipment and initial

combat supplies, in a single ship and in a manner permitting selective and rapid debarkation in accordance with the tactical plan. Key personnel, matériel, essential supplies, maintenance equipment and personnel, and communication equipment should be dispersed. Quartermaster units should move to the far shore as units whenever possible, rather than as forward and rear echelons. This will facilitate briefing and will help to insure that quartermaster personnel are available for handling quartermaster supplies and equipment rather than troops less familiar with the supplies or the work techniques.

11. CLASS I SUPPLY

a. Assault Phase. During this phase, all supply is normally on an automatic basis. In the opening phases of the assault, units supply themselves from their unit loads. As soon as the combat elements move far enough inland to clear sufficient beach area for supply activities, beach class I dumps are established. These beach reserves generally include comparatively small quantities of supplies and are composed of small detachment and individual combat rations, as administrative orders direct. The dumps normally issue to units on an automatic basis and are, in turn, automatically replenished by the prerequisitioned supplies brought in by successive convoys.

b. Build-up Phase. Supply over the beaches continues during the build-up phase. The temporary class I dumps are closed and a beach class I dump established in the beach maintenance area for all units in the assault. This dump is normally under

the control of the army service command. The division provides its own transportation, supplemented by regimental transportation if necessary, and hauls supplies to division issue areas. Subsistence should continue to be supplied on an automatic basis. During this period the type B operational ration should begin to be issued wherever possible.

c. Port Phase. Beginning with the port phase of supply, an army class I depot or supply points are established and the division requisitions supplies according to the usual procedures. At this time the use of the B ration will be increased.

12. CLASS II AND IV SUPPLY

a. Assault Phase. The class II and IV section of the quartermaster annex to the administrative order should list the clothing and individual equipment that troops may wear or carry during the assault, the clothing and individual equipment that must be turned in to be resupplied at the earliest practicable time after the assault, the clothing and individual equipment that may be included in the unit load, and the organizational clothing and equipment to accompany the unit. Thus, class II and IV supply during the assault period is actually a matter of resupply. The resupply is normally accomplished by the use of beach maintenance sets or assault packs.

- (1) Beach maintenance sets where used will be prepared on the basis of allowances prescribed by higher headquarters. They are a larger-scale means of resupply and their composition depends upon the size of the assault force, the climate of the theater, and

the nature of the operation. As an example, a beach maintenance set may be based on the needs of 5,000 men for 15 days, skid-loaded and palletized so that it may be shipped and unloaded as a unit. Distribution is accomplished by requisition only, since the set must be broken down for issue. For this reason, beach maintenance sets are normally distributed from class II and IV beach dumps by echelons higher than division.

- (2) Assault packs contain the essential supplies needed by each soldier during the assault. The items included in the pack will depend upon the climate of the theater and the nature of the operation. Assault packs when used should be scheduled for delivery on the far shore according to specified percentages of troops landed. Class II and IV resupply is then on a unit or individual basis. Automatic issue is made from class II and IV beach dumps as required.

b. Build-up Phase. During the build-up phase, the resupply of class II and IV items will be primarily a continuance of the method used during the assault phase. Beach maintenance sets are replaced by follow-up maintenance sets. Assault packs should be delivered in larger numbers.

c. Port Phase. With the port supply phase, bulk supplies are received and the use of assault packs or maintenance sets is discontinued. Supplies are requisitioned by the division according to normal procedures; however, class II and IV supplies may

be issued from army class I supply points instead of from a single depot.

13. CLASS III SUPPLY

a. Assault Phase. Normally, all unit vehicles are fueled before the assault and carry a specified reserve in 5-gallon drums. In addition, petroleum products are carried in limited amounts aboard the various types of landing craft. Class III beach dumps are operated from these supplies. However, the practice of issuing petroleum on a drum-for-drum basis will not generally be in effect during the assault period.

b. Build-up Phase. Packaged petroleum will continue to be supplied over the beaches during this period, but in larger quantities. The temporary beach dumps are usually closed, however, and supply maintained from consolidated distribution points.

c. Port Phase. With the beginning of the port phase, the receipt of bulk petroleum is handled by higher echelon and distributed to division on a packaged basis.

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